2008 Census Dress Rehearsal
Local Update of Census Addresses (LUCA) Program
User Guide

June 2006

Option 3 – Non-Title 13 Address List Submission
Computer-Readable Format

USCENSUSBUREAU

Helping You Make Informed Decisions

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CHAPTER 1
INTRODUCTION TO THE 2008 CENSUS DRESS REHEARSAL LOCAL UPDATE OF CENSUS ADDRESSES (LUCA) PROGRAM

The 2008 Census Dress Rehearsal Local Update of Census Addresses (LUCA) Program

In preparation for the 2010 Census, the U.S. Census Bureau is conducting the 2008 Census Dress Rehearsal for selected jurisdictions. The Local Update of Census Addresses (LUCA) Program is an integral part of the census dress rehearsal activities and utilizes the expertise of tribal, state, and local governments to improve the accuracy and completeness of the address list used to take the census.

The Census Bureau invited the highest elected official of your jurisdiction to participate in this program. Your jurisdiction selected Option 3, Non-Title 13 Local Address List Submission in a computer-readable format. This option allows you to:

- Review the Census Bureau's Address Count List for your jurisdiction (for reference purposes only).
- Submit your local address list file (city-style[1] addresses only) in a predefined Census Bureau computer-readable format. **The Census Bureau will only accept local address files in the predefined format presented in Chapter 5.**
- Identify any additions, deletions, or corrections to boundaries, roads, or other physical features on the Census Bureau paper maps or submit an updated version of the digital map file (shapefile) provided by the Census Bureau..

Background

The Census Address List Improvement Act

The Census Address List Improvement Act of 1994 (Public Law 103-430) strengthened the Census Bureau's partnership capabilities with tribal, state, and local governments by expanding the methods the Census Bureau could use to exchange address information. Designed to improve the accuracy of the Census Bureau's

[1] An address that consists of a house number and street name; for example, 201 Main Street. The address may or may not be used for the delivery of mail and may include apartment numbers/designations or similar identifiers. *See Chapter 2.*

address list, the Act authorized the Census Bureau to provide individual addresses to officials of tribal, state, and local governments who agreed to conditions of confidentiality. Census 2000 marked the first decennial census for which the Census Bureau could provide its address list for review to governments that signed the required confidentiality agreement.

The Census Bureau's Master Address File (MAF)

In preparation for Census 2000, the Census Bureau created the Master Address File (MAF) by merging the 1990 Address Control File[2] with the latest version of the U.S. Postal Service's (USPS) Delivery Sequence File[3] (DSF). The MAF is a nationwide list of all address records used to support many of the Census Bureau's operations. Besides containing mailing addresses and ZIP Codes, a MAF record also contains geographic information about the location of addresses. In areas where there are noncity-style (e.g., rural route or post office box number) address, the MAF record may contain additional information such as a location description.

The Topologically Integrated Geographic Encoding and Referencing (TIGER®) Database

The MAF address records are linked to feature segments in the Topologically Integrated Geographic Encoding and Referencing (TIGER®) database. The TIGER® database includes the geographic coordinates and names of all streets, water features, and other linear features, and boundaries for all jurisdictions and statistical areas (census tracts[4], census blocks[5], etc.) used to tabulate decennial census data. The TIGER® database also includes address ranges along streets that have city-style addresses and the hierarchy of census geographic area codes from the state level down to individual census blocks (http://www.census.gov/geo/www/geodiagram.html). By linking the MAF address records to the TIGER® database, the Census Bureau is able to identify street segments along which an individual address exists and determine the geographic code that applies to that address.

The Census Bureau's Geography Division regularly updates the MAF and TIGER® from various sources. In addition to the USPS DSF, other sources of updates include Census 2000 field operations, updates from current household surveys, special censuses, and local sources.

Census Bureau LUCA Responsibilities

The Census Bureau's LUCA responsibilities include:

- Providing training to LUCA Program participants.

[2] The 1990 residential address list used to label questionnaires, control the mail response check-in operation, and determine the nonresponse followup workload.
[3] A computerized file containing all delivery point addresses serviced by the U.S. Postal Service (USPS). The USPS updates the DSF continuously as its letter carriers identify addresses for new delivery points or changes in the status of existing addresses.
[4] A census tract is a small, relatively permanent statistical division of a county or statistically equivalent entity, delineated for the purpose of presenting Census Bureau statistical data.
[5] A census block is a geographic area bounded by visible features, such as streets, roads, streams, and railroad tracks, and invisible features, such as the boundaries of governmental units and other legal entities. Census blocks are the smallest area for which the Census Bureau collects and tabulates statistical information.

- Providing the necessary materials to participants.
- Providing technical assistance.
- Processing the updates submitted by LUCA participants.
- Conducting a 100% address canvassing (field check) operation to validate the content of the Address List.
- Providing feedback materials to participants.

LUCA Participant Responsibilities

Your responsibilities include:

- Selecting staff to perform the LUCA Program review.
- Ensuring the receipt of all required materials for the LUCA Program review.
- Ensuring that everyone working on the LUCA Program understands the procedures for participating in the program and Census Bureau terminology.
- Preparing a strategy to conduct the review of LUCA materials.
- Conducting the review of LUCA materials.
- Returning the updated maps and your local address list file to your Census Bureau Regional Office.
- Reviewing the Census Bureau's feedback report.
- Relaying to the Census Bureau any questions regarding the feedback report.

Training and Technical Support

Training workshops conducted by Census Bureau staff will provide you with "hands-on" experience in using the 2008 Census Dress Rehearsal LUCA Program materials. Should you need additional information, please contact your Census Bureau Regional Office listed on the back cover.

Schedule

January 2006	LUCA advance notification letters and materials mailed to highest elected officials
March – May 2006	Census Bureau invited local governments to participate in the LUCA Program
May 2006	Census Bureau conducted training workshops for participants
June 2006	Census Bureau mailed LUCA materials to participants
June – October 2006	Participants conduct LUCA review
October 2006	**Participants return updated maps and their local address list to the Census Bureau's regional offices**
November – December 2006	Census Bureau processes submissions and updates
April – May 2007	Census Bureau conducts address canvassing (field check) operation

The 2008 Census Dress Rehearsal LUCA User Guide Overview

The 2008 Census Dress Rehearsal LUCA User Guide provides instructions and examples for your review of the LUCA Program materials.

Before you begin your review, read **Chapter 2**. This chapter discusses:

- The Census Bureau's definitions of housing units and group quarters.
- An explanation of the acceptable types of housing units and group quarters to include in your local address file.
- An explanation of the types of addresses classified by the Census Bureau.
- Sources for local address information.

Chapter 3 explains the Address Count List, the file name and format, software requirements, and how to open the file.

Chapter 4 describes the information contained on a Census Bureau paper map. Census Bureau paper maps or a digital file (shapefile) are available to all LUCA participants to use as a reference with the Address Count List and to make any necessary updates or corrections to features and boundaries. This chapter includes:

- How to read a Census Bureau paper map.
- An example of a portion of a Census Bureau paper map.
- Examples of paper map updates.
- A brief outline of the MAF/TIGER Accuracy Improvement Project (MTAIP).
- How to submit shapefile feature information.
- An overview of the Boundary and Annexation Survey (BAS) Program.

Appendix F provides detailed information about the map legend. If you need to make updates or corrections to your jurisdiction boundaries, the Census Bureau's BAS program is explained in *Appendix A*. *Appendix B* contains the Digital BAS Guidelines Supplement, Boundary and Annexation Survey (BAS) User's Guide for submitting shapefiles. A blank Annexations and Detachments Form is included for boundary documentation in *Appendix C*.

Should you need to update your Census Bureau contact person(s), *Appendix D* provides a Contact Update Information Form.

Appendix E provides an inventory form to enclose with your returned materials.

A glossary of Census Bureau terms related to the LUCA Program is included. For additional Census Bureau terms and information, please visit the Census Bureau Web site at http://www.census.gov/**.**

The Census Bureau's regional office addresses, telephone numbers, and E-mail addresses are listed on the back cover.

CHAPTER 2
BEFORE YOU BEGIN YOUR REVIEW

Chapter 2 provides some terms and concepts used by the Census Bureau and strategies for your LUCA review. Refer to the *Glossary* or visit the Census Bureau's Web site at http://www.census.gov for additional terms and definitions.

What is a Housing Unit?

A single-family house, townhouse, mobile home, trailer, vacant trailer park pad, apartment, group of rooms, or a single room occupied as a separate living quarters or, if vacant, intended for occupancy as a separate living quarters. A separate living quarters is one in which one or more occupants (or intended occupants, if vacant) live separate from any other individual(s) in the building and have direct access to the living quarters without going through another living quarters, such as from outside the building or through a common hall.

The following types of housing units are acceptable and should be included on your address list:

- Houses, including townhouses and condominiums.
- Apartments.
- Living quarters within an otherwise nonresidential structure. For example, an apartment within a church, school, or business.
- Mobile homes or trailers occupied as separate living quarters, or if vacant, intended for occupancy as separate living quarters.
- Any units under construction that will be habitable (closed to the elements with final roof, windows, and doors) on Census Day, April 1, 2008.

What are Group Quarters?

A place where people live or stay that is normally owned or managed by an entity or organization providing housing and/or services for the residents. These services may include custodial or medical care, as well as other types of assistance, and residency is commonly restricted to those receiving those services. People living in group quarters are usually not related to each other.

The following types of group quarters are acceptable and should be included on your address list:

- Correctional facilities.
- Juvenile facilities.
- Nursing homes.

- Hospitals with long-term care facilities.
- College or university dormitories, fraternities, sororities.
- Dormitories for workers.
- Religious group quarters.
- Shelters.
- Group homes.
- Any group quarters under construction that will be habitable (closed to the elements with final roof, windows, and doors) on Census Day, April 1, 2008.

Note: Housing units and group quarters can exist within the same structure.

Unacceptable Types of Housing Units and Group Quarters

Exclude the following unacceptable types of housing units and group quarters addresses from your address list:

- Used as nonresidential storage facilities or as offices or businesses in which no one is living.
- Condemned or scheduled for demolition.
- Being converted or remodeled for nonresidential purposes.
- Used solely for nonresidential storage.
- Used solely as offices or businesses in which no one is living.
- Used solely for ceremonial purposes.
- Under construction and will **not** be habitable (closed to the elements with final roof, windows, and doors) on Census Day, April 1, 2008.

Census Bureau Addresses

Residential and Nonresidential Addresses

The Census Bureau divides all addresses into two *use types*, residential and nonresidential. Residential addresses are addresses of housing units and group quarters. Nonresidential addresses are addresses of a structure or unit within a structure that do not serve as a residence, such as commercial establishments, schools, government offices, and churches.

Some structures can contain both residential and nonresidential units, even though they have a single address.

Address Formats

City-style Address Format

The majority of housing units and group quarters in the United States have a house number and street name address; for example, 212 Elm Street or 137 Clark Ct., Apt. 316. The Census Bureau refers to these as city-style addresses. Addresses for housing units in multi-unit structures, such as apartment buildings, should contain a unit designator, for example, Apt 101 or Ste D. The Census Bureau and the U.S. Postal Service treat these designators as part of the housing unit address, and they are included in each affected census address record. Some

city-style addresses, referred to as E-911 addresses, are used only to provide location for emergency services, such as police, fire, and rescue.

Noncity-Style Address Format

The Census Bureau classifies addresses that do not include a house number and street name as noncity-style addresses. The majority of noncity-style addresses are located in the more sparsely settled areas of the United States; however, they may exist in small or medium sized towns as well. Frequently used noncity-style mailing addresses include:

- General delivery.
- Rural route and box number.
- Highway contract route and box number.
- Post Office box only delivery.

Noncity-style addresses often do not follow any numeric sequence, and may not be associated with the name of the street or highway on which they are located. For this reason, the Census Bureau uses different methods to compile the list of addresses for inclusion into the Address List, such as location descriptions (BRICK HSE w/ATTACHED GARAGE), structure points (geographic coordinates), and geographic codes. Census Bureau maps that show structure points in selected areas, (generally those with sparse settlement) are considered Title 13, U.S.C., material.

Strategies for the Review of LUCA Program Materials

You must decide for yourself how to conduct the LUCA Program review. Consider your available time, the information you have readily available, and the staff and computer resources you have. If resources are limited, the Census Bureau recommends focusing on areas where addresses are more likely to be missed or incorrect. For example:

- Areas of new construction.
- E-911 address conversion areas.
- Areas that have changed from single-family homes to multi-family homes and vice versa.
- Warehouses converted to residential lofts.
- New mobile home parks or new scattered mobile homes.
- Apartment buildings with irregular or missing numbering schemes for the individual units.
- Recently added territory.
- Addresses near governmental boundaries.

Local Address Sources

There are many possible sources of local address information. Some of these sources may be good indicators of where change is taking place. The following list provides suggestions for local address source materials:

- New housing construction or building permits (include units that are under construction only if final roof, doors, and windows will be in place on Census Day, April 1, 2008).
- E-911 address files.
- Housing occupancy permits.
- Planning or zoning records.
- Local utility records.
- Drivers' license files.
- Annexation records.
- Assessment or taxation files.
- Voter registration files.

CHAPTER 3
THE LUCA PROGRAM'S COMPUTER-READABLE ADDRESS COUNT LIST FILE

Introduction

The Address Count List file for your jurisdiction is included on your CD-ROM. This chapter explains the:

- File name and format.
- Software requirements.
- How to open the file.

The File Name

The Address Count List (ACL) file contains the address counts for each census block within your jurisdiction. The name of the file is:

Address Count List – XXyyyyyyyy_08.ACL

Where:

XX = 2 character, alpha entity type (ST for State, CO for County, PL for Place, and MC for Minor Civil Division), and
yyyyyyyy = variable length, numeric entity ID code.

The entity identification code is of variable length, depending on the type of entity:

- State: 2 digits
- County: 3 digits
- Census Minor civil division (MCD): 3 digits
- Census Place: 4 digits

Figure 3.1: Entity Identification Codes

Entity	Entity Identification Code	Total Characters
State	ST (2 alpha) + (2 numeric)	4
County	CO (2 alpha) + State (2 numeric) + County (3 numeric)	7
Minor Civil Division (MCD)	MC (2 alpha) + State (2 numeric) + County (3 numeric) + MCD (3 numeric)	10
Census Place	PL (2 alpha) + State (2 numeric) + Place (4)	8

An example of an Address Count List 4-character state file name is ST36_08.ACL where "ST" is state and "36" is the state code for New York. An example of a 7-character county file name for Erie County, New York is CO36029_08.ACL, where "ST" is state, "36" is the state code for New York, and "029" is the county code for Erie County.

The file name for a Minor Civil Division is 10-characters while the file name for a Census place is 8-characters. For example, the Address Count List file name for "My Township", Indiana County, Pennsylvania is MC42063985_08.ACL where:

- "MC" is minor civil division.
- "42" is the state code for Pennsylvania.
- "063" is the county code for Indiana County.
- "985", the minor civil division code for My Township.

An example of the file name for the place "Lake Zurich", Illinois, is PL173115_08.ACL, where "PL" is place, "17", the state code for Illinois, and "3115" is the Census place code for Lake Zurich.

Another example of an 8-character file name for the place "Mitchell", Wyoming, is PL564578_08.ACL, where "PL" is place, "56" is the state code for Wyoming, and "4578" is the Census place code for Mitchell.

The File Format

The file is formatted as pipe-delimited ASCII text file.

- Each block record is at least 56 characters in length and contains nine (9) fields of information. The character length of each record may vary. See Figure 3.2 for the Address Count List file record layout.

Example – Address Count List File Record Layout

Figure 3.2: Address Count List File Record Layout

Maximum Character Length	Field Name	Description/Notes
11	Entity ID Code	Unique number assigned by the Census Bureau to each entity
2	State Code	2-digit Current State Code
3	County Code	3-digit Current County Code
7	Census Tract and Suffix	4-digit Census Tract Number, plus 2-digit number suffix, if applicable, includes a period for suffixed tracts.
5	Census Block and Suffix	4-digit Current Census Block Number, plus 1-digit alpha character suffix if applicable
7	Census Count of Housing Unit Addresses	Census Bureau's most recent count of housing unit addresses
7	Local Count of Housing Unit Addresses	Most recent count of housing unit addresses entered by participant
7	Census Count of Group Quarters Addresses	Census Bureau's most recent count of group quarters addresses
7	Local Count of Group Quarters Addresses	Most recent count of group quarters addresses entered by participant

Software Requirements

Many commercial spreadsheet and database programs[6] can open the LUCA files. Use spreadsheet programs such as Microsoft Excel or Lotus 123 to open, view, and edit small files. For larger files, use a database program such as Corel Paradox, QuattroPro, Microsoft Access, or dBase.

Note: Some computer programs that can open and view pipe-delimited text files CANNOT save an edited file in the correct format. Make sure your program has the ability to save or export a file with pipe-delimited fields.

Opening the Files

Refer to the Readme file (Readme 1 st.txt) for instructions on opening the files.

- The Census Bureau recommends that you make a copy of the file and place it on your hard drive. This will preserve the original file should you need to look at an original record or require another original copy of the file.

  Note: The file you receive is a pipe-delimited ASCII text files, meaning it can be viewed and read as letters and numbers with a text editor. All spreadsheet and database programs can read and understand these text files.

- Some spreadsheet and database software packages will not recognize text files unless the file name includes the .TXT file name extension. If necessary, change the file name extension to .TXT. For instance, the Address Count List file name for Lake Zurich, Illinois, PL173115_08.ACL, must be changed to PL173115_08.**txt**.

- To help keep your work organized, create a new directory or new folder on your hard drive. Copy the files from the CD-ROM into that directory or folder.

- When you open the text file with your application, some spreadsheets and databases will prompt you to supply some information about the file. Be prepared to tell the application program the following:

  - Fields are **delimited.**
  - Delimiter is **pipe.**
  - Text qualifier is **none.**
  - All field types are **text.**

- Define all field types as "**text**" including numeric fields such as census tract number, census block number, and so forth.

- Follow the record layout to name and define the sizes of your fields.

[6] The Census Bureau does not endorse or recommend the use of any specific software to view its files. The program names included here are only examples of programs that are able to read computer-readable files.

Example – Pipe-delimited Address Count List File

The following is an example of how the information may appear in the Address Count List file before importing the file using your software program. This example is for a place, entity ID code PL162233, in the state of Idaho, state code 16, place code 2233. There are 765 housing unit addresses and three (3) group quarters addresses in Census Tract 6789.01, Census Block 5432.

PL162233|16|089|6789.01|5432|765| |3|

Figure 3.3: Pipe-delimited Address Count List File

Field Number	Field Name	Example
1	Entity ID Code	PL162233
2	State Code	16
3	County Code	089
4	Census Tract and Suffix	6789.01
5	Census Block and Suffix	5432
6	Census Count of Housing Unit Addresses	765
7	Local Count of Housing Unit Addresses	Blank
8	Census Count of Group Quarters Addresses	3
9	Local Count of Group Quarters Addresses	Blank

CHAPTER 4
THE CENSUS BUREAU MAPS

Introduction

The Census Bureau provides you with one set of paper maps or a digital file (shapefile) to use in conjunction with the Address Count List. If you requested paper maps, you receive a Map Sheet to Block Number Relationship List that identifies the map sheet(s) on which each census block is located. You may use the paper maps or shapefile to submit any needed updates and/or corrections to your jurisdiction's features and boundaries. The Boundary and Annexation Survey (BAS) section of this chapter provides an overview of the BAS program. If you need to make changes or corrections to your jurisdiction's boundaries, refer to Appendixes A and B for instructions.

This chapter also provides an overview of the Census Bureau's MAF/TIGER Accuracy Improvement Project (MTAIP) undertaken by the Census Bureau to update and improve the accuracy of the TIGER® database.

The map updates you provide will allow the Census Bureau to update the TIGER® database so that all subsequent map and address list products reflect these changes.

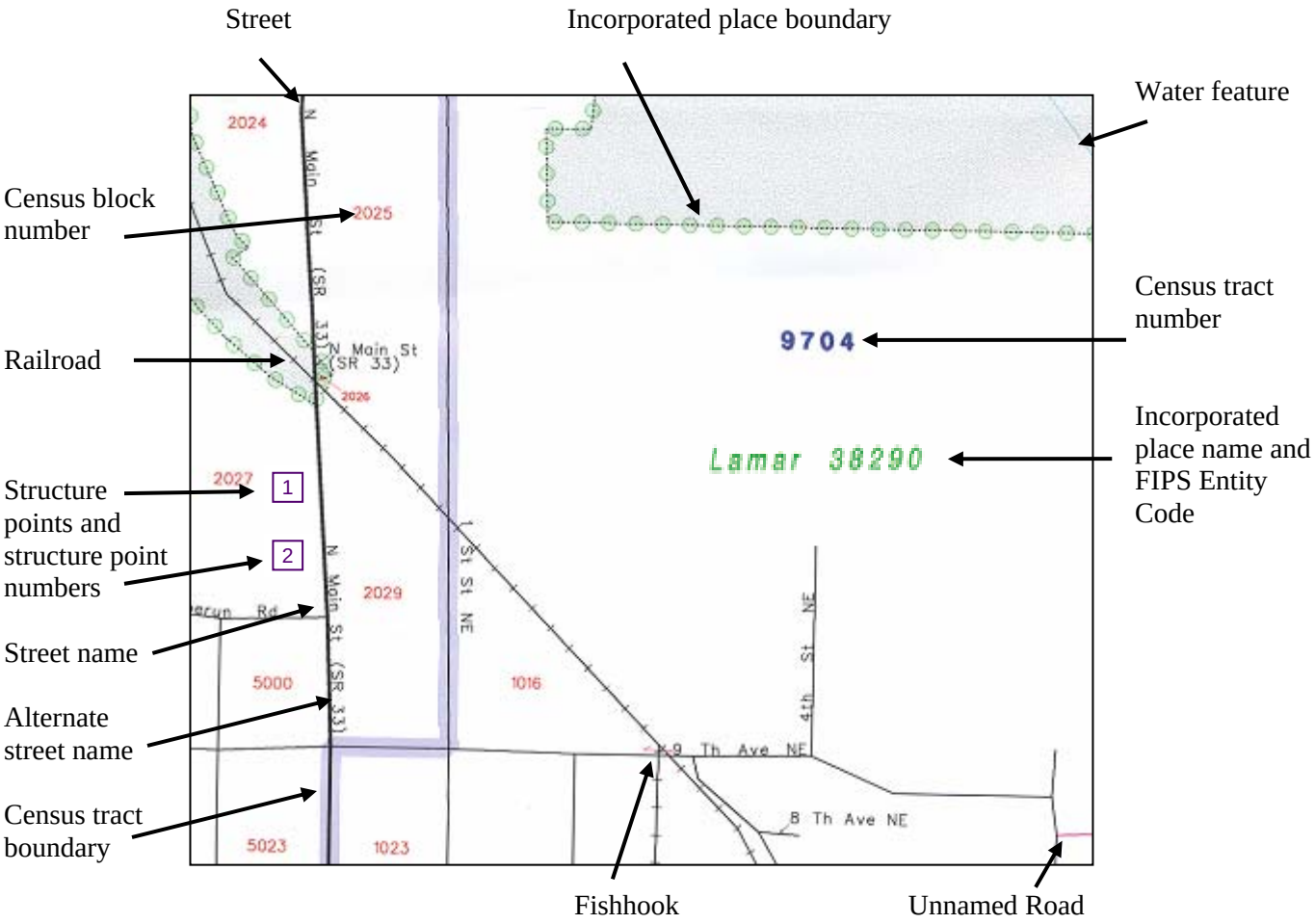
Reading a Census Bureau Paper Map

The Census Bureau paper map shows some of the same information found on a typical road map, such as streets and roads, water features, and legal boundaries. However, the Census Bureau map displays this information using symbols unique to the Census Bureau. See *Appendix F* for a detailed explanation of the map legend. Figure 4.1 provides a sample of a Census Bureau map. The maps display the following information:

- The area inside your jurisdiction is colored white.
- The area outside of your jurisdiction is shaded.
- Boundaries.
- Streets/roads and their names.
- Water features and their names, if any.

- Other features, including their name, if applicable.
- Jurisdiction codes and names for your jurisdiction and the adjacent area.
- Census blocks.
- Census tracts.
- Fishhooks.
- Structure points and structure point numbers. (Maps for Option 3 do not contain structure points.)
- All map sheets contain a legend that display the symbols used on the maps (*See Appendix F*).

Figure 4.1: Sample of a Census Bureau Paper Map



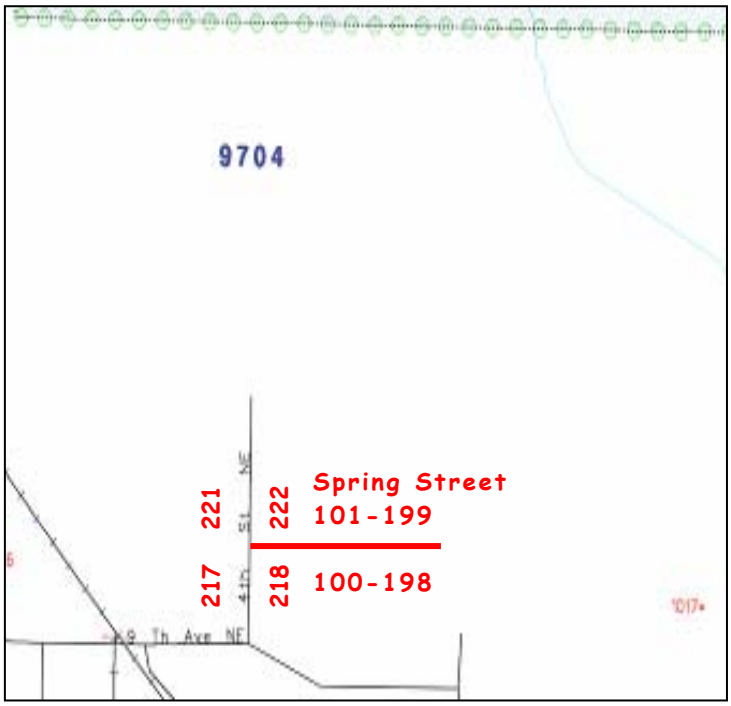
The following examples display the most common updates you can make to the Census Bureau maps.

Examples

Map Example 1: Adding a New Street and Associated Address Ranges

You may find that all or parts of existing streets are missing from the map. For example, Spring Street is a new street with newly constructed housing units in census tract **9704** and census block **1017** and is missing from the map

Figure 4.2: Adding a New Street and Associated Address Ranges



Using a **red** pencil, draw the location of Spring Street on the map and label it **Spring St**.

- Print the address range[7] for each side of Spring St.
- Print the address breaks[8] where the new street intersects 4th Street NE.
- Make any updates to your address list, as needed, so that the maps match your address list.

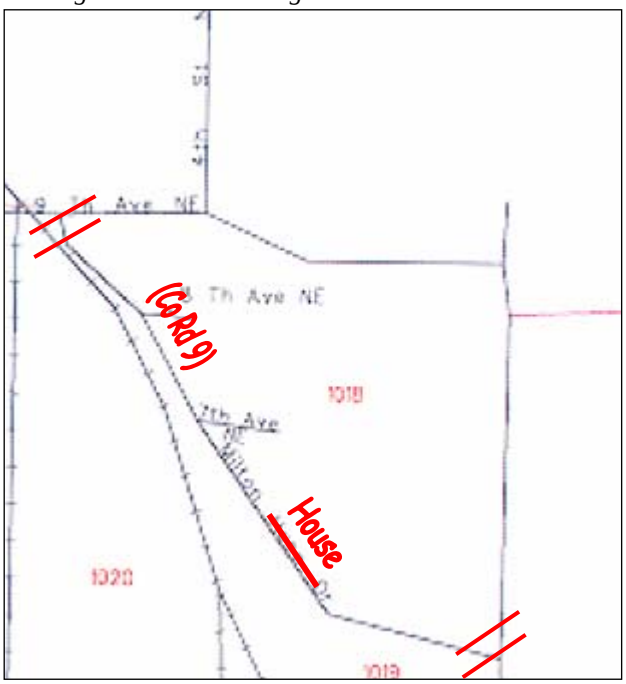
[7] Address ranges are the first and last house address numbers that could exist along a given section of a street. An address range is usually separated into two component ranges to reflect addresses along the left and right sides of the street. Usually one side of the street has only even address numbers and the other side has only odd address numbers.

[8] Address breaks are the city-style address on each side of a boundary or at an intersection of a street with another feature.

Map Example 2: Correcting a Street Name

The map shows **MILTON *HOSE* DR** instead of the correct name, **MILTON *HOUSE* DR**.

Figure 4.3: Correcting a Street Name



- Using a **red** pencil, cross out **HOSE** and print **HOUSE** above it.
- Use double hatch marks to show the extent of the name change on the maps, if applicable.
- Provide, if applicable, any alternate names that may exist for a street (such as Co Rd 9) by printing this name in parentheses on the map.
- Make any corrections to your address list, as needed, so that the maps match your list.

Map Example 3: Moving a Street

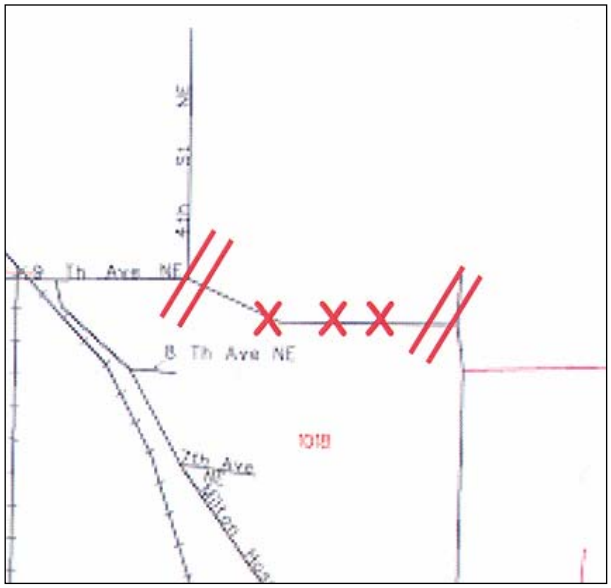
Figure 4.4: Moving a Street

The map shows **2nd Ct NW** located in census block **5032**. Actually, **2nd Ct NW** is located in census block **5035**.

- Using a **red** pencil, circle the feature in its current location
- Redraw the feature and print the feature name in the correct census block
- Draw an arrow to the correct location of the moved street
- Print any necessary address ranges and address breaks along the streets as shown in Figure 4.4.
- Make corrections to your address list, as needed, so that your list matches the map.

Map Example 4: Deleting a Street

Figure 4.5: Deleting a Street



All of the housing units along a portion of **9th Avenue NE** in census block **1018** have been demolished and this section of the street no longer exists.

- Using a **red** pencil, "**X**" out the section of **9th Avenue NE** that no longer exists. Use double hatch marks to define the extent of the deleted segment when deleting only part of the street. When deleting an entire street, "**X**" out the street and put a **red** line through its name.

- Correct all affected addresses on your address list, as needed, so that the maps match your list.

The MAF/TIGER Accuracy Improvement Project: Digital Update of the TIGER® Database

In 2002, the Census Bureau initiated the MAF/TIGER Accuracy Improvement Project (MTAIP) as part of the MAF/TIGER Enhancements Program (MTEP). This project acquired geographic information system (GIS) files, aerial photography, and GPS data from various sources nationwide to update the TIGER® database. One of the primary goals of the project was to develop a highly accurate geographic database of the United States, Puerto Rico, and the Island Areas. The Census Bureau focused on improving the accuracy of street feature coordinates to provide base information suitable for use with GPS-equipped hand-held devices that would facilitate the gathering of accurate location and census information for all living quarters and workplaces.

If your jurisdiction has been updated through the MTAIP process, carefully review the features and boundaries and make corrections where necessary. Pay special attention to the shape of the overall boundary because boundary segments may have been realigned based on changes to underlying roads or water features. Boundary segments that do not follow physical features (i.e., boundary lines through space) were adjusted relative to the surrounding physical features. Some water and road features shown as a single line may now be shown as two lines representing shorelines where you will need to determine the correct alignment of the boundary.

Shapefiles

The shapefiles, created from the Census Bureau's Topographically Integrated Geographic Encoding and Referencing System (TIGER®), allows participants to submit map feature updates electronically. Shapefiles require the use GIS software.

All shapefiles provided by the Census Bureau are in Environmental Systems Research Institute (ESRI) shapefile format. Participants that submit shapefiles with feature updates must follow Census Bureau requirements.

In order to maintain topology, the Census Bureau has provided an "all lines" shapefile layer. In addition to the all lines layer, the Census Bureau has provided shapefile layers for legal and statistical boundaries that may be edited by the user. For more details on the contents of the shapefiles, view the readme.txt file that is included in the CD containing the shapefiles.

Submitting Shapefile Feature Information

In order to submit digital feature information, you must have a GIS capable of importing ESRI shapefiles, editing the features, and exporting layers back into ESRI shapefile format.

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The Census Bureau's Shapefile Coordinate System and Projection Information

All shapefiles provided by the Census Bureau are in the following unprojected geographic based coordinate system:

- GCS_NAD83
- Angular Unit: Degree (0.0174532925199433299)
- Prime Meridian: Greenwich (0.000000000000000000)
- Datum: D_North_American_1983
- Spheroid: GRS_1980
- Semi-major Axis: 6378137.000000000000000000
- Semi-minor Axis: 6356752.314140356100000000
- Inverse Flattening: 298.257222101000020000

Please feel free to project these files into your local coordinate system/projection.

General File Setup Guidelines

Upon receipt of your shapefile, please follow the setup guidelines listed below before beginning actual updates:

- Open the CD and enclosed zip file to ensure it contains the shapefiles for your entity.
- Copy and decompress shapefiles to a directory on your server or hard drive.
- Open the shapefiles in a GIS.

Note: The use of brand names does not represent an endorsement of a company or its products by the U.S. government. Due to the wide use of ESRI products by our partners in the GIS community, and the ubiquitous use of the shapefile format as a medium for GIS data exchange, the Census Bureau is providing this data in shapefile format. You should not encounter any problems when importing these shapefiles into your local GIS software. If you are using GIS software that does not contain a shapefile translator, please contact the Census Bureau at 301-763-1099 for further instructions.

Changing Our Coordinate System to Match Yours

Our files are in GCS NAD83 format. The spatial referencing information is also stored in each shapefile's *.PRJ file. Most GIS software packages contain projection wizards, or something similar, allowing the user to transform file coordinate systems and projections. For example, if your office uses ArcView to update files, please activate and utilize ArcView's "Projection Utility Wizard" extension. If using ArcGIS, please use its "Projection Utilities" in ArcToolbox. TIGER® extract shapefiles contain defined projection information in the *.PRJ file. Both ArcView and ArcGIS access the *.PRJ file for projection information; therefore, there is no need for you to define these parameters before changing a file's coordinate system.

In addition, if your files are in a datum other than NAD83, you must geographically transform our files to match your datum. Most GIS software has tools for performing geographic transformations on files. However, if you encounter problems transforming our files, please contact the Census Bureau at 301-763-1099 for assistance.

Feature Information

The Census Bureau will collect feature changes designated by the participant. Please note that all feature-related update processing occurs at a different location and time within the Census Bureau.

If you have reviewed your features using our line feature network and have determined that the Census Bureau needs to add, remove, or rename features in a given area, you may submit your modifications in a separate layer. To move or correct a feature, first delete the feature then add the correction.

Note: In the future, large numbers of feature changes will be made through a program called the Automated Feature and Attribute Update System (AFAUS). AFAUS will have the ability to add new road features, names, and address ranges to the MAF/TIGER database directly from local GIS files (we cannot process scanned maps or cadastral boundary files). The files must represent road centerlines (and eventually other feature types). The update process will be able to match local features to the MAF/TIGER database and update it with new and revised information. The Census Bureau will evaluate local files provided. The AFAUS is scheduled to begin production in 2007.

Please use the appropriate update code located in the coding scheme as shown in Figure 4.6 to identify the type of feature modification needed for submission.

If any issues arise with the feature layer that you submitted, a member of the RO team will attempt to contact you to clarify the issue. If clarification is not made prior to our project deadline, the updates may not be incorporated into TIGER®. Your updates are considered provisional until their existence is confirmed during our field check.

Updating the Feature Shapefile

Create a new line layer in the shapefile provided by the Census Bureau that includes the following feature updates:

- Each change must contain a separate line record for each update made to the file.
- Each update related line must contain one of the codes listed in the coding scheme and that code must be recorded in the attribute field for the line.

See Figure 4.7 for an example.

Figure 4.6: Change Type Codes for Feature Corrections

Change Type Codes for Feature Corrections

Code	Translation	Additional Requirements (if applicable
NF	New Feature	If adding a new feature (Road, Railroad, Hydrography, etc.), code all new feature segments with a 'NF' value in CHNG_TYPE field.
CN	Change Name	If changing the name of a feature, code the line segment(s) with a 'CN' in the CHNG_TYPE field, and provide the feature's new name in the 'FENAME' field.
CF	Change Feature Class	If changing the feature class code for a feature, code the CHNG_TYPE field with a 'CF' (i.e., a local road was mistakenly coded as a highway).
DF	Delete Feature	If deleting a feature, provide all deleted feature segments in a change line layer, and code all deleted segments with a 'DF' value in the CHNG_TYPE field.

Displaying Features Based on CFCC1

Within the *.shp file you may want to display different feature types based on the Census Feature Class Code (CFCC1). For example, you may want to display all roads in black, hydro features in blue, etc. Some of the CFCC1 values listed below may not appear in the shapefiles you have, but for your reference:

- 'A' → Roads
- 'B' → Railroad
- 'C' → Miscellaneous Ground Transportation
- 'D' → Landmark
- 'E' → Physical Features
- 'F' → Nonvisible Features (such as boundaries for

incorporated places, counties, school districts, etc.)

- 'G' → US Census Bureau Usage (for internal programs)
- 'H' → Hydrography
- 'P' → Provisional Features
- 'X' → Not Yet Classified

For more detailed information on CFCC's, you can refer to pp. 3-28 to 3-45 of the most recent TIGER/Line® documentation at http://www.census.gov/geo/www/tiger/index.html**.**

Figure 4.7: Digital Road Correction Example

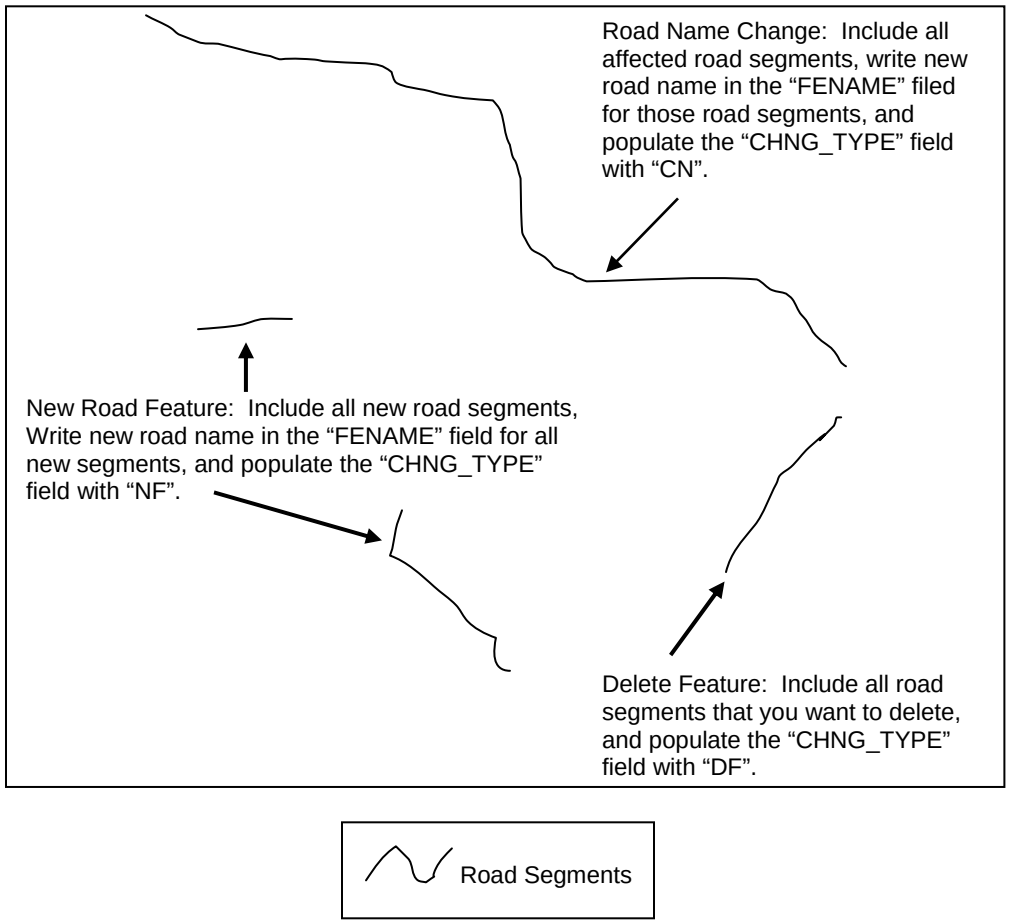


Figure 4.7 consists of road corrections that you may wish to submit. Create a separate layer containing just those road segments that you would like the Census Bureau to add, remove, or rename.

Figure 4.8: Table Extract for Figure 4.7

TLID	CFCC	CFCC1	FIDELITY	FENAME	CHNG_TYPE
	A41	A	0	Oak Street	NF
	A41	A	0	Oak Street	NF
	A41	A	0	Oak Street	NF
9999999998	A41	A	0	Cherry Street	CN
9999999998	A41	A	0	Cherry Street	CN
9999999998	A41	A	0	Cherry Street	CN
9999999998	A41	A	0	Cherry Street	CN
9999999998	A41	A	0	Cherry Street	CN
9999999998	A41	A	0	Cherry Street	CN
9999999998	A41	A	0	Elm Street	DF
9999999998	A41	A	0	Elm Street	DF
9999999998	A41	A	0	Elm Street	DF
9999999998	A41	A	0	Elm Street	DF

Figure 4.8 is an example of a table extract from Figure 4.7. Provide the CFCC, CFCC1, Fidelity, FENAME, and CHNG_TYPE when adding new road features. The participant is required to provide CFCC, FENAME, and CHNG_TYPE information only for each road name change. The "TLID," "CFCC," "CFCC1," and "Fidelity" fields are informational fields that do not require filling by the participant for existing road features. When deleting roads/features, provide the CHNG_TYPE.

Address Information

The Census Bureau will not collect address break information through digital feature submission. A process is being designed to capture this information digitally in future programs. If you have an accurate address source that you would like to share with the Census Bureau at this time, please contact your Census Bureau Regional Office.

Data Dictionary and Metadata

Data Dictionary

Submit a data dictionary[9], either as part of the metadata or as a separate file. The table in Figure 4.9 provides a data dictionary for all line shapefiles.

[9] A data dictionary describes the fields included in any data tables associated with your submission. A data dictionary should list all the fields, describe the data in each field, and provide the legal values and their definitions for each field.

Figure 4.9: Data Dictionary for all Line Shapefiles

Data Dictionary for all Line Shapefiles

Field	Length	Type	Description
TLID	10	Integer	TIGER/Line® ID
CFCC	3	String	Feature CFCC
CFCC1	1	String	First Character of feature CFCC
Fidelity	1	Integer	Shape Fidelity Flag
FENAME	90	String	Feature Name
CHNG_TYPE	2	String	Type of digital linear update

Figure 4.10: Data Dictionary for Census Tracts

Data Dictionary for Census Tracts

Field	Length	Type	Description
STATE	2	String	Current state Federal Information Processing Standard (FIPS) code
COUNTY	3	String	Current county FIPS code
TRACT	6	String	Current census tract code
GEOID	11	String	Current state and county FIPS codes, and current census tract code

Figure 4.11: Data Dictionary for Census Blocks

Data Dictionary for Census Blocks

Field	Length	Type	Description
STATE	2	String	Current state Federal Information Processing Standard (FIPS) code
COUNTY	3	String	Current county FIPS code
TRACT	6	String	Current census tract code
BLOCKCU	4	String	Current census block (base) code
BLOCKCU_SUF	1	String	Current census block (suffix) code
GEOID	16	String	Current state and county FIPS codes, current census tract code, current census block (base) code, and current census block (suffix) code

Metadata Requirements

Submit appropriate metadata with your file.

Metadata that describe the data content, coordinate system/projection, author, source, and other characteristics of GIS files are critical for Census Bureau staff to efficiently and accurately process files. The Census Bureau requires that a metadata text file accompany every GIS file and layer submitted.

The Federal Geographic Data Committee's (FGDC) Content Standard for Digital Spatial Metadata provides a national standard that enables the data-sharing public to easily locate critical information about a file and ensure that no critical information is omitted inadvertently when creating metadata. For this reason, the Census Bureau requests that metadata be submitted using this standard. For information about the FGDC and its geospatial metadata standards, please visit http://www.fgdc.gov/metadata/metadata.html

The Census Bureau requires that the following sections of the FGDC metadata form be completed:

- Citation (information about the originator, publication date, title edition, and other publications or information).
- Description (section that contains an abstract describing your data set).
- Time period of content (section that describes the vintage of the data).
- Spatial domain (information about bounding coordinates).
- Point of contact (general contact information).
- Data quality information (information about attribute accuracy).

- Spatial reference information (section on coordinate system / projection of the data set).
- Entity and attribute information (section that describes the contents of your table).

Moreover, if you are using Arc/Info, the following link points to a useful Arc Macro Language (AML) tool that, when executed, completes most of the required sections of the metadata form automatically http://marinemetadata.org/tools/refs/FGDCMeta. (This AML is a product of the Illinois State Geological Survey.)

Note: ESRI's ArcCatalog also has an embedded program that uses the FGDC standard in its creation of geospatial metadata.

If you have questions regarding the data dictionary or metadata requirements, please contact the Census Bureau at 301-763-1099.

Digital File Submission

Use the following as a guide to ensure that you have included all the required layers.

- Name the feature update layer as the following (this file is only required if making updates to your road features) and export the layer to a shapefile:

  LUCA08_<ST><COU>_FEAUpdates.shp

  The feature update layer must include:

  - A value in its "CHNG_TYPE" field that indicates the type of change.
  - Only feature updates (do not include unmodified features).

Compressing the File

Compress all updated materials, Shapefile, Data Dictionary, and Metadata, into one ZIP formatted file called**:**

LUCA08_<ST><COU>_Return.ZIP.

Note: Please use PkZip or GZip software, if possible.

Burn the file to a CD-ROM and submit according to the directions provided in Chapter 5.

Boundary and Annexation Survey (BAS)

The Census Bureau conducts the Boundary and Annexation Survey (BAS) each year to determine the inventory of correct names, legal descriptions, and legal boundaries of counties and equivalent entities, minor civil divisions, incorporated places, American Indian reservations, and American Indian off-reservation trust lands. The Census Bureau enters all boundary and area information obtained through the BAS into the TIGER® database so that all subsequent map and address list products reflect these changes.

During your review, you may find that the boundary for your jurisdiction, as shown on the Census Bureau map, does not depict the correct current location. You may submit boundary corrections on the paper Census Bureau map as explained in *Appendix A* or using a digital file as described in the *Appendix B, Digital BAS Guidelines Supplement Boundary and Annexation Survey (BAS) User's Guide*. This user's guide is included for your reference as a supplement to the LUCA Program.

For more information on submitting digital boundary files and the BAS program, please, visit the BAS Web site at http://www.census.gov/geo/www.bas/bashome.html.

CHAPTER 5
THE LUCA PROGRAM'S PREDEFINED LOCAL ADDRESS LIST FILE FORMAT

The LUCA Program's Predefined Local Address List File Format

You must submit your local address file (city-style addresses only) in the **predefined format** as shown in Figure 5.1. The Census Bureau will only accept and process address files submitted in the LUCA Program's predefined format. We will not accept/process noncity-style addresses.

Figure 5.1: LUCA Program's Predefined File Format for Local Address List Submission

	Maximum Character Length	Field Name	Description/Notes
1	11	Entity ID Code	Unique number assigned by the Census Bureau to each entity
2	2	State Code	2-digit Current State Code
3	3	County Code	3-digit Current County Code
4	7	Census Tract Number	4-digit Census Tract Number, plus 2-digit number suffix, if applicable, includes a period for suffixed tracts
5	5	Census Block Number	4-digit Current Census Block Number, plus 1-digit alpha character suffix if applicable
6	1	Group Quarters Flag	Display a 'Y' if the unit is a group quarters, if applicable
7	23	House Number	Housing unit's or group quarter's assigned house number
8	2	Street Name Prefix Direction	e.g., N, W, SE
9	4	Street Name Prefix Type	e.g., HWY, RT, US
10	40	Street Name	Full street or road name
11	4	Street Name Suffix Type	e.g., ST, CT, AVE, DR
12	2	Street Name Suffix Direction	e.g., N,W, SE
13	3	Street Name Street Extension	e.g. EXT, ALT, BUS
14	100	GQ Name	Name of group quarter (Dobbs Hall-University of Dobbs)
15	27	Apartment/Unit Number	Within structure descriptor or identifier, such as APT 5 or 1st FL FRNT
16	5	Mailing ZIP Code	5-digit ZIP Code for mailing addresses

The Address List Template Record Layout File

An address list template record layout is included on your CD-ROM. If you choose, you may use this template to import your local address file for submission. The name of this file is:

AddressListTemplate.txt

- Create a new directory or new folder on your hard drive. Copy the file from the CD-ROM into that directory or folder.

- When you open the text file with your application, tell the application program the following:

    - Fields are **delimited**.
    - Delimiter is **pipe**.
    - Text qualifier is **none**.
    - All field types are **text**.

Define all field types as "**text.**"

Be sure that the required address information is in the appropriate field for each address. Your Entity ID, state, and county codes can be found on the Address Count List materials and/or the maps.

1. Entity ID Code
2. State code
3. County code
4. Census tract number
5. Census block number
6. Group quarters flag, if applicable:

    - Enter a "**Y**" in the "**Group Quarters Flag"** field (Field 6) for a group quarters address.

    - Add the name of the group quarters in the **"GQ Name"** field (Field 14).

7. House number
8. Street Name Prefix Direction
9. Street Name Prefix Type
10. Street or road name
11. Street Name Suffix Type
12. Street name Suffix Direction
13. Street Name Street Extension
14. Group Quarters name, if applicable (Be sure that the "**Group Quarters Flag**" in Field 6, displays a '**Y**').
15. Apartment/unit number, if applicable:

    If you have multi-unit structures (apartments, condominiums, etc.) listed in your address file or need to add these addresses, use the following guidelines for identifying individual units.

- Enter the unit designation (e.g., APT 5, UNIT 103) in the **"Apartment/Unit Number"** field, if known.

- If the apartment/unit numbers are unknown, but you know the number of units at the multi-unit structure, enter "*#" in the "**Apartment/Unit Number**" field for each unit added. For example, the new multi unit structure located at the basic street address 505 Wells Blvd, contains twenty units.

  - Create twenty records with the correct census geography (i.e., state code, county code, census tract number, census block number) and the basic street address, 505 Wells Blvd.

  - For each unit added at 505 Wells Blvd enter in order, the appropriate "*#" in the "**Apartment/Unit Number**" field. For example, for the first unit added at 505 Wells Blvd, enter "*1" in the "**Apartment/Unit Number**" field; for the second unit record added, enter "*2" in the "**Apartment/Unit Number**" field, and so on, until you get to the twentieth unit record, where you enter "*20" in the "**Apartment/Unit Number**" field.

  The "" character will alert the Census Bureau that the actual unit identifiers are unknown and that we need to obtain further information during our field check of the addresses.*

  Note: You may use the procedure described above to add addresses for mobile home or trailer lots, whether occupied or vacant.

16. ZIP Code

CHAPTER 6
SUMITTING YOUR LOCAL ADDRESS FILE AND MAP UPDATES

Submitting LUCA Materials

Submit your address list and maps with updates to the **Census Bureau Regional Office** responsible for your jurisdiction (See the back cover for the address of your regional office). Please include the inventory **form**, *Appendix E*, with your materials. For all submissions, use shipping contractors that provide tracing services, such as U.S. Postal Service (USPS) certified or registered mail, Fed Ex, United Parcel Service (UPS), or similar service.

Your Local Address File

- Save your address list file under a new name (so that you have a backup copy).
- Save the file in a pipe-delimited ASCII format and burn it to a CD-ROM.
- Keep the backup copy of your file until the regional office staff informs you that they have received and successfully processed your files.

Census Bureau Paper Maps

- Separate the Census map sheets with annotations from those without annotations.
- Make a copy of all map sheets containing annotations to keep for your records and to use during the feedback process, if necessary.
- Organize the map sheets by map sheet number.
- Fold the maps if there are five or fewer map sheets.
- If there are more than five map sheets, roll the maps and mail them in a mailing tube or box.

Shapefile

- Burn the shapefile to a CD-ROM.
- Keep a backup copy of your updated digital file for your records.

Shipping Your LUCA Materials

- Address the envelope to the Director, Census Bureau Regional Office for your jurisdiction to the address provided on the back cover to the attention of the LUCA Staff.

- Use shipping contractors that provide tracing services, such as U.S. Postal Service (USPS) certified or registered mail, Fed Ex, United Parcel Service (UPS), or similar service.

APPENDIXES

Appendix A
Boundary and Annexation Survey (BAS) Paper Map

The Census Bureau conducts the Boundary and Annexation Survey (BAS) each year to determine the inventory of correct names, legal descriptions, and legal boundaries of counties and equivalent entities, minor civil divisions, incorporated places, American Indian reservations, and American off-reservation trust lands. Title 13, U.S.C. authorizes this voluntary survey. Specifically, the Census Bureau requests up-to-date boundary information for local governments and information on the legal actions associated with the changed boundaries. The Census Bureau enters all boundary and area information obtained through the BAS into the TIGER® database so that all subsequent map and address list products reflect these changes.

Boundary Changes

During your review, you may find that the boundary for your jurisdiction, as shown on the Census Bureau map, does not depict the correct current location. If there is a discrepancy, you can correct the Census Bureau map to reflect the current boundary for your jurisdiction and complete the signature box located in the lower right corner on the map. For the Census Bureau to process this correction you must complete the 2008 Census Dress Rehearsal LUCA Annexations and Detachments form found in *Appendix C*. Photocopy this form if you need additional pages.

Using a **red** pencil, update the Census Bureau map as shown in Figure A.1.

- Draw the new boundary in its correct location and cross out the portion of the old boundary using a string of red "**X**'s".

- Add the ordinance number or other legal identifier of the action authorizing the change, along with the effective date of each annexation or detachment that you draw on the map.

- Complete the red signature box found in the lower right corner of the Census Bureau map as shown in Figure A.2.

  Note: If the boundary change represents a correction to the Census Bureau map where the boundary was previously reported correctly, but not digitized accurately, correct the location of the boundary using a **red** pencil, and annotate with the letters "**BC**" for boundary correction next to the corrected line as shown in Figure A.2.

- If a boundary is shown as coincident with a feature, but the feature location is not shown correctly, use a **purple pencil** to cross out the incorrect feature location and redraw the feature in **purple pencil** in the correct location. There is no need to make any annotation to the boundary.

- Complete the 2008 Census Dress Rehearsal LUCA Annexation and Detachment form found in *Appendix C.* Figure A.3 provides an example of a completed form.

  Note: Use the 5-digit FIPS code in the subject matter area of your map. (Minor civil division FIPS codes are in red, while incorporated place codes are in green.)

Figure A.1: Boundary Changes

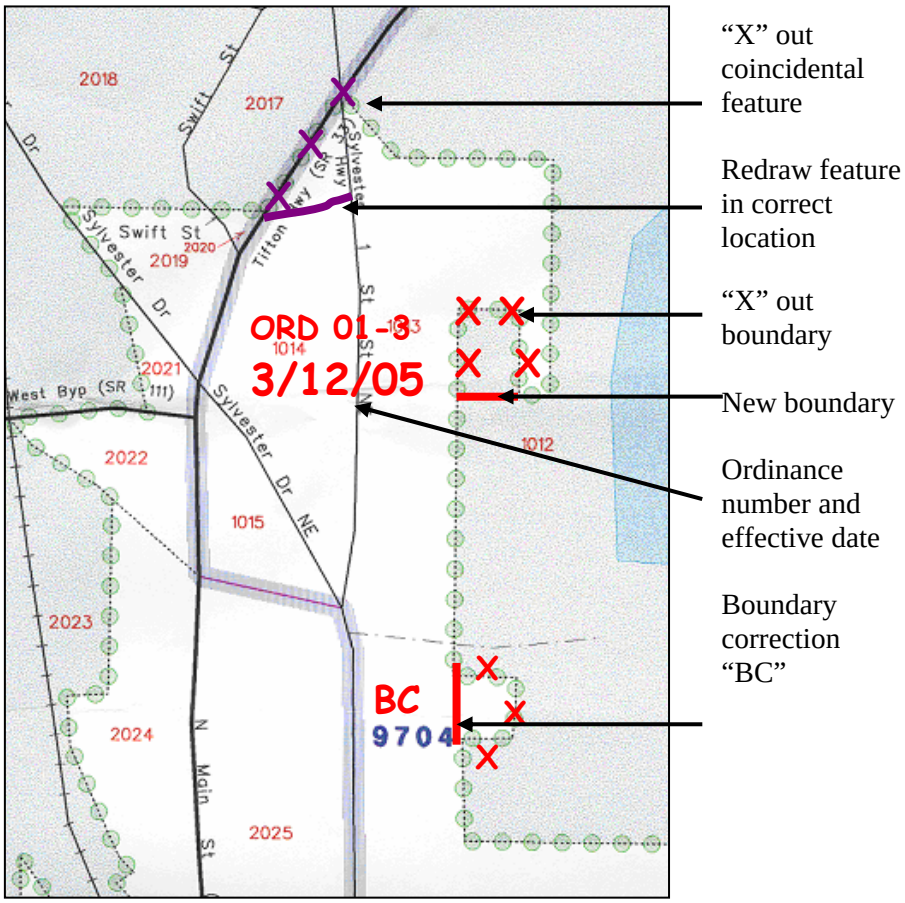


Figure A.2: Signature Box

The corrected boundaries shown on the map are accurate as of January 1, 2006.			
Date	Print Name and Position	Signature	Telephone
3/12/05	Joan A. Smith, Clerk	*Joan A. Smith*	(800)555-9876
SIGNATURE BOX			

Figure A.3: Example of a Completed Annexations and Detachments Form

2008 Census Dress Rehearsal
Local Update of Census Addresses (LUCA) Program
Annexations and Detachments Form

Please print or type the information about your government in the boxes below.

Government Name Mitchell, Wyoming

Entity Code* 56789

PERSON COMPLETING THIS FORM

Signature *Joan A. Smith*

Your Name (Printed) Joan A. Smith

Title City Clerk

Telephone (800) 555-9876

FAX (800) 555-9876 **E-Mail Address** smithj@mitchell.com

Record below the information requested for all annexations (A) or detachments (D) that you have added to the 2008 Dress Rehearsal LUCA program map(s). Be sure that you put the authorization number and effective date in or near the area on the map. The Census Bureau will supply this information to the state certifying agency for your state; please ensure that you properly file all legal changes with your state government in accordance with your state's laws.

Type of Change A **or** D (1)	Authorization *Enter in column 2 -* O **– Ordinance** R **– Resolution** L **– Local Law** S **– State-level action** X **– Other type**		Effective date *Month/day/year* (4)	County or parish in which A **(annexation)** D **(detachment)** **or** O **(other) occurred** (5)	Minor Civil Division (if any) in which A **(annexation)** D **(detachment)** **or** O **(other) occurred** (6)	Estimated Area	
	Type (2)	Number (3)				Square miles or (in hundredths) (7)	Acres (in tenths) (8)
A	O	01-3	3/13/2005	Cameron		8 sq miles	

D-1642

***** *Use the 5-digit FIPS code in the subject matter area of your map. (Minor civil division FIPS codes are in red, while incorporated place codes are in green.)*

Appendix B
Boundary and Annexation Survey (BAS) Digital File Submission User's Guide

This user guide is included for your reference as a supplement to the LUCA Program

Digital BAS Guidelines Supplement Boundary and Annexation Survey (BAS) User's Guide

1. Introduction

The U.S. Census Bureau conducts an annual survey called the Boundary and Annexation Survey (BAS) to collect information about selected legally defined geographic areas, such as counties, cities, and towns. The BAS also provides an opportunity for participants to review the names and geographic relationships for these areas. The BAS information is used to provide an appropriate record for reporting the results of the decennial and economic censuses, and to support the population estimates program and the American Community Survey. In compliance with the Office of Management and Budget Circular A-16, the BAS supports the spatial data steward responsibilities of the Geospatial One-Stop by updating the inventory of, and boundaries, for governmental units. In addition, the BAS is the source of up-to-date information on boundaries, codes, and names for the U. S. Geological Survey's (USGS) National Map, the Federal Information Processing Standards (FIPS) program and the Geographic Names Information System. The BAS is also the source for changes in the boundaries of incorporated places, minor civil divisions (MCDs), counties, and federally recognized American Indian Areas, which include reservations and off-reservation trust lands.

2. Digital BAS Submission Requirements

The Digital BAS program is an added option to report changes for the BAS. In order to facilitate the accurate transfer of boundary data from our Digital BAS partners and to aide in their ability to analyze and understand the differences between the Topologically Integrated Geographic Encoding and Referencing System (TIGER®) and local files, the Census Bureau has created new guidelines and procedures for the submission of digital files for BAS. This process will allow participants to submit changes via updating shapefiles created from a version of the Census Bureau's TIGER®. The new process allows the Census Bureau to process boundary changes, corrections, and differences between files. To participate in the Digital BAS program, you must meet the following requirements:

- Your county must have completed the realignment process for the MAF/TIGER Accuracy Improvement Project (MTAIP). The current list of counties that have completed the realignment process is posted on our Web site at http://www.census.gov/geo/www/bas/bashome.html**.**

- You must provide information for the BAS point of contact, the person updating the shapefiles, and the highest elected official for your entity (See form at end of document for required data.).

- You must have the ability to edit a Census Bureau shapefile extract of your entity.

If you have questions or concerns about the participation requirements, please contact a member of the BAS team at 301-763-1099 or e-mail

geo.bas@census.gov with your contact information and someone will respond.

3. Topologically Integrated Geographic Encoding and Referencing System (TIGER®) and Master Address File (MAF)

The Geography Division of the Census Bureau is responsible for developing geographic applications and executing the geographic and cartographic activities needed to support the Census Bureau in collecting and disseminating census data. For the last 20 years, the Census Bureau's Topologically Integrated Geographic Encoding and Referencing System (TIGER®) and Master Address File (MAF) have become the two most critical geographic resources for supporting the Census Bureau in its collection and dissemination of data.

The Census Bureau's TIGER® system automates the mapping and related geographic activities required to support the decennial census and sample survey programs of the Census Bureau starting with the 1990 decennial census. The TIGER® database includes geographic features such as roads, railroads, water, boundaries, and other geographic information needed to support the programs of the Census Bureau. In addition, the TIGER® database is repository of street address ranges, ZIP codes, and feature names. However, note that TIGER® does not contain specific addresses. TIGER® is a topologically integrated geographic database, in which the topological structures of TIGER® define the location and relationship of streets, rivers, railroads, and other features to each other and to the numerous geographic entities for which the Census Bureau tabulates data for its censuses and sample surveys. Because TIGER® is an integrated database where all boundaries and features reside within one layer, we must adhere to strict topology rules and be cognizant of feature/boundary relationships when making modifications to entities in TIGER®. If you are interested in acquiring more information about the Census Bureau's TIGER® database and products, please visit the following Web site http://www.census.gov/geo/www/tiger/index.html.

To assemble accurate address data that could be maintained and updated, the Census Bureau developed the MAF in the 1990s. The MAF includes addresses that allow census forms to be mailed and, in some cases, provide descriptions of living quarters enabling census enumerators to deliver forms. In addition, the MAF has a geocoding linkage to the postal information in TIGER®. Although TIGER® is part of the public domain, the MAF is restricted from public use by Title 13 of the U.S. Code.

4. MAF/TIGER Accuracy Improvement Project (MTAIP)

The Census Bureau has embarked on an initiative to enhance and streamline the MAF/TIGER system. This effort is referred to as MTAIP. The Census Bureau's goal for MTAIP is to spatially improve features and boundaries in the TIGER® database. The Census Bureau is currently in the process of updating TIGER® based on digital files submitted by state, local, and tribal governments. This is because many state, local, and tribal governments have geographic information systems (GIS) that maintain a significantly greater positional accuracy than that in the TIGER® database and meet our minimum accuracy requirements. Once acquired, the Census Bureau evaluates the various layers associated with the file(s) submitted and determines whether the file(s) can be used for the MTAIP process. Because we are improving feature and boundary coordinates based on state, local, and tribal MTAIP submissions there is a greater likelihood that Digital BAS submissions from the aforementioned governments will closely align with modified TIGER® making both boundary corrections and changes easier to identify. This will also create a solid common geographic foundation for future boundary exchanges for governments that have participated in the MTAIP process. If you have additional questions about the MTAIP process, please contact a geographer at your Census Bureau Regional Office. The contact information is located on the back cover.

5. Census Provided Shapefiles

The Census Bureau is providing all Digital BAS participants with entity layers in Environmental Systems Research Institute (ESRI) shapefile format[1]. The number of polygon-based shapefiles that the Census Bureau sends to each Digital BAS participant depends on the type of entities contained within each county. However, each participant, regardless of the number of geographic entities, receives only one shapefile for the linear feature network for the county.

All shapefiles, provided by the Census Bureau, are in the following unprojected geographic based coordinate system:

GCS_NAD83,
Angular Unit: Degree (0.017453292519943299),
Prime Meridian: Greenwich (0.000000000000000000),
Datum: D_North_American_1983,
Spheroid: GRS_1980,
Semi-major Axis: 6378137.000000000000000000,
Semi-minor Axis: 6356752.314140356100000000, and
Inverse Flattening: 298.257222101000020000.

[1] The use of brand names does not represent an endorsement of a company or its products by the U.S. government. Due to the wide use of ESRI products by our partners in the GIS community, and the ubiquitous use of the shapefile format as a medium for GIS data exchange, the Census Bureau is providing this data in shapefile format. You should encounter no problems when importing these shapefiles into your local GIS software. However, if you are using GIS software that does not contain a shapefile translator, please contact the Census Bureau for further instructions (301-763-1099 or e-mail geo.bas@census.gov).

Please feel free to project these files into your local coordinate system/projection. After completing your updates, you may submit the boundary shapefile using your local coordinate system/projection provided that the shapefile's coordinate system contains a defined projection file (e.g., *.PRJ file) and spatial reference materials (e.g., metadata).

6. Updating the Provided Shapefile

The following will describe how to update the Census provided shapefiles to reflect corrections to your boundary or changes that may have occurred since the last BAS survey. You may also use the following procedures to submit information documenting the creation of new incorporations and dissolutions of incorporated places, MCDs, counties, and county equivalent areas. Please use the feature layers provided to create edits, which maintain accurate boundary to feature relationships. This is important since TIGER® is a topologically integrated system.

In order to update our digital file, overlay our digital boundary file with your entity's individual boundary shapefile. Code each boundary update with the appropriate boundary coding scheme found in Appendix B-1. The data dictionary in Appendix B will provide you with field definitions and naming conventions used for updating the attribute table with the appropriate boundary codes. The following subsections will provide detailed explanations and examples of the boundary update process. As a supplement, flowcharts can be located in Appendixes B-4 and B-5 to aide in the boundary update and submission processes.

If we have any problems processing the boundary file which you submitted, a member of the Census Bureau's BAS team will get in touch with the point of contact to clarify the issue. If we cannot clarify the problem prior to our project deadline, the updates will not be incorporated into TIGER®. We will continue to try to resolve these issues before the next BAS cycle.

6.1 General File Setup Guidelines

Upon receipt of your shapefile, please follow the setup guidelines listed below before beginning actual updates:

- open the CD and enclosed zip file to ensure it contains the shapefiles for your entity,
- copy and decompress shapefiles to a directory on your server or hard drive, and
- open the shapefiles in a GIS.

6.2 Changing Our Coordinate System to Match Yours

Our files are in GCS NAD83 format. The spatial referencing information is also stored in each shapefile's *.PRJ file. Most GIS software packages contain projection wizards, or something similar, that allows the user to transform file coordinate systems and projections. For example, if your office uses ArcView to update files, please activate and utilize ArcView's 'Projection Utility Wizard' extension. If using ArcGIS, please use its 'Projection Utilities' in ArcToolbox. TIGER® extract shapefiles contain defined projection information in the *.PRJ file. Both ArcView and ArcGIS access the *.PRJ file for projection information; therefore, there is no need for you to define these parameters before changing the file coordinate systems.

6.3 Annexations, Deannexations, and Boundary Corrections: (Areas added, deleted, or corrected for your entity)

The Census Bureau has provided shapefiles for all entities that are eligible for update as part of the BAS. Select the shapefile that contains the entity requiring updates, and make all revisions to that shapefile. Once all updates are completed, create a new polygon layer that contains only the new updates that you would like the Census Bureau to make for your entity(s). If a boundary update crosses into a new county and additional shapefiles are needed, please contact a BAS team member at 301-763-1099, or send e-mail to geo.bas@census.gov. Geographic corridors and offsets can be submitted through the Digital BAS process. Please refer to the 2006 BAS User's Guide for definitions of Geographic Corridors (formerly Corporate Corridors) and Geographic Offsets (formerly Corporate Offsets). http://www.census.gov/geo/www/bas/bashome.html

For your reference, we are providing detailed examples of how you can update the Shapefiles. For example, a county planner wishes to make two annexations for a place within their county. Although there are many ways to use GIS to accomplish these updates, we are providing one suggested method:

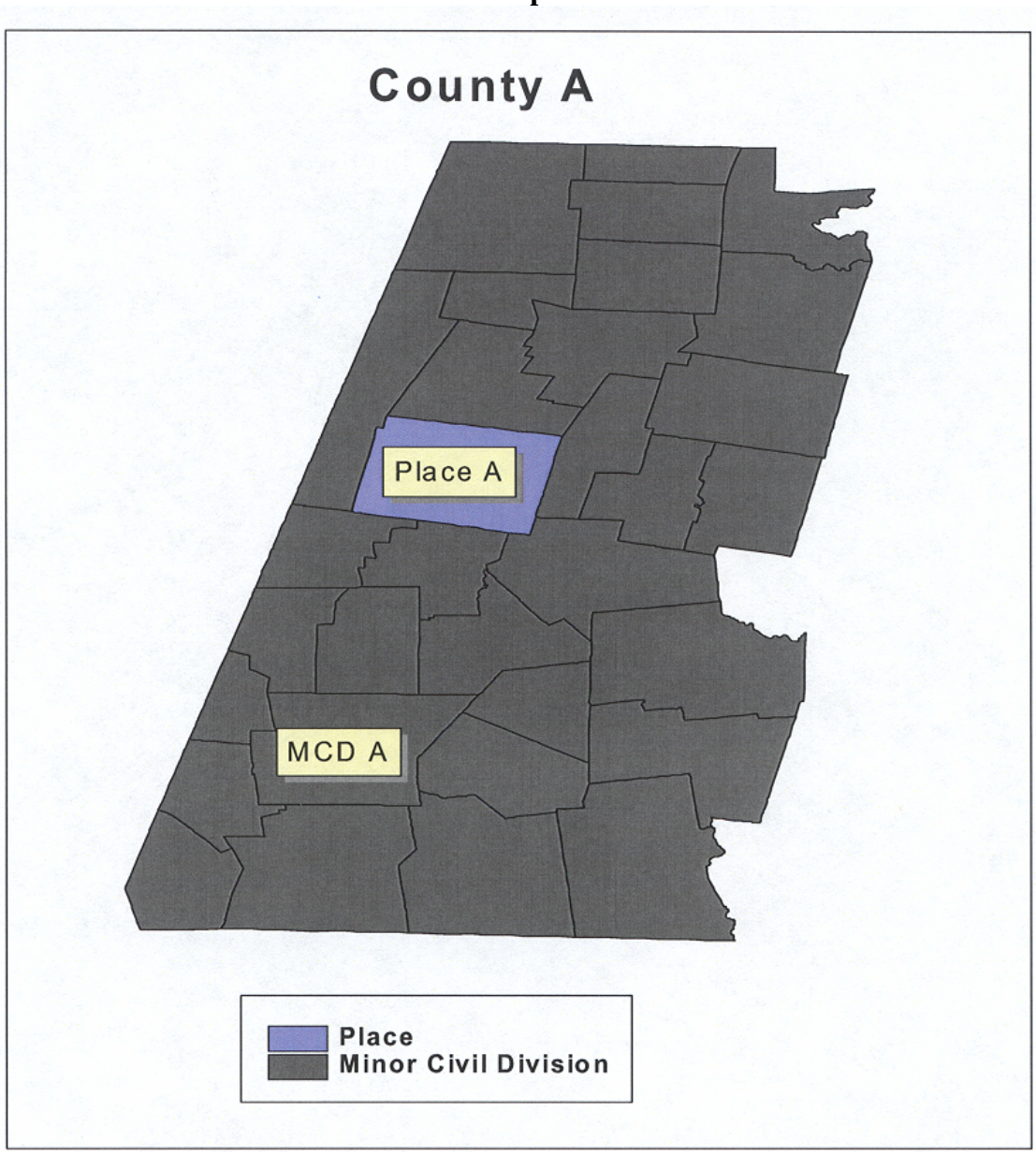
- Make a copy of the Census Bureau place shapefile.
- Make all updates to the newly created layer using GIS editing techniques (as a reminder, please use the Census Bureau provided linear features layer as a referencing guide when making boundary placement decisions) (See Examples 2-3).
- Union the modified place layer with the original Census Bureau place shapefile to identify the changes which you made (See Example 4).
- Create a new polygon layer by selecting the change polygons from the newly created unionized layer. Be sure to only select the change polygons before exporting to a new file (See Examples 5-6)
- Populate the various BAS-related fields in the polygon's attribute table with annexation information and other census related codes (use the coding scheme in Appendix B-1 for information on how to fill-in the CHNG_TYPE field because every change polygon requires a code - See Example 7).

If more than one level of geography requires updating (e.g., MCDs and places), continue making updates to each layer using methods similar to those mentioned above. Merge all the change polygons for the modified boundary layers into one change polygon layer.

The attribute table should contain all BAS-related fields (e.g., annexation date, ordinance number, etc.), and the various levels of geography being updated. The spatial examples illustrate how to make updates to our spatial layers for two entities, at different geographic levels.

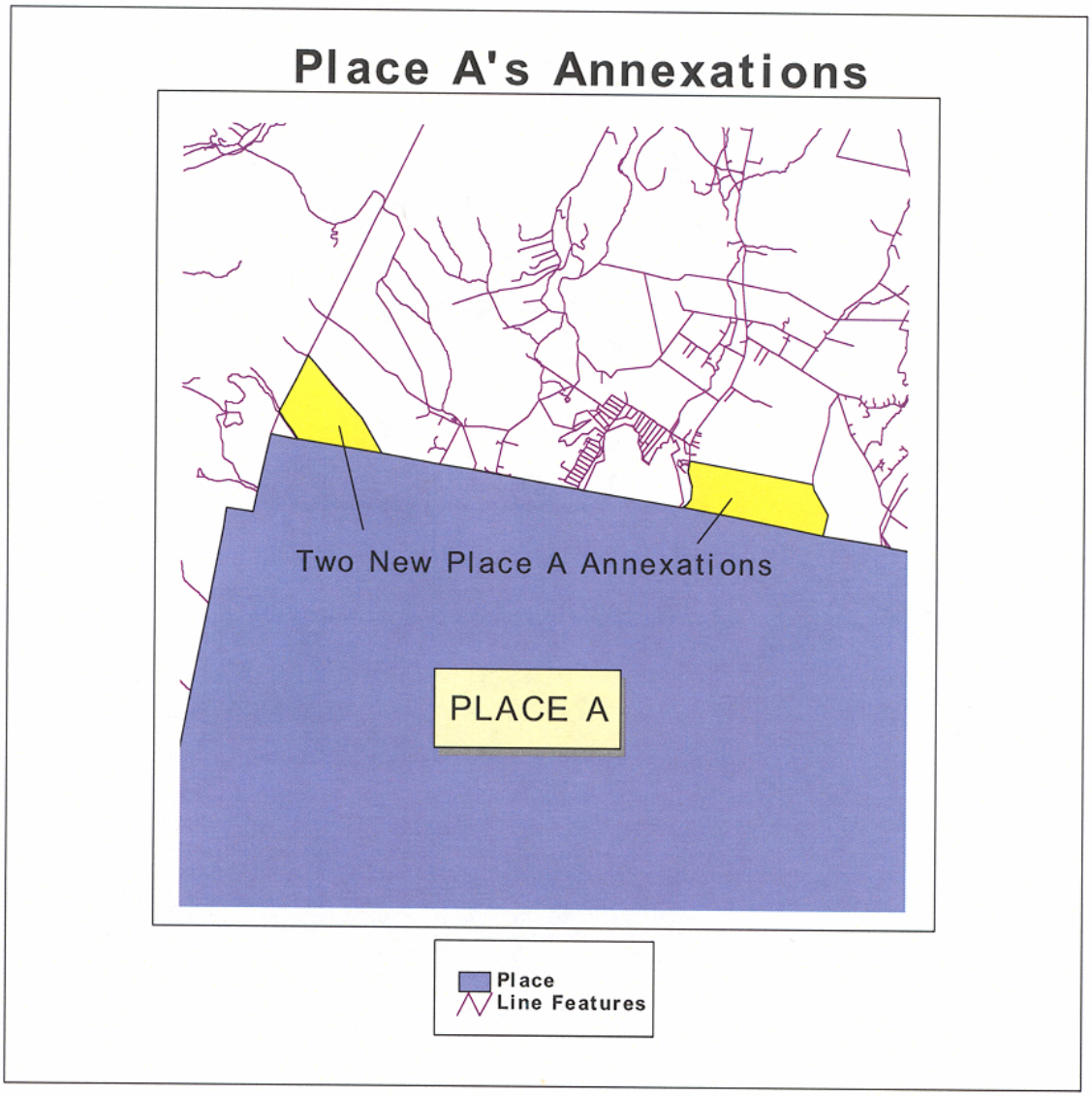
Note: If you are utilizing ArcGIS 9.x software you may simplify the process by using the 'Symmetrical Difference' and 'Multipart to Singlepart' tools in ArcToolbox. Instead of creating a union between the modified layer and the Census Bureau layer you may use the 'Symmetrical Difference' tool. Input the modified feature layer into the 'Input Features' box and the Census Bureau layer into the 'Union Features' box. This will provide you with a change polygon layer. In order to separate the grouped change polygons into single change polygons, utilize the 'Multipart to Singlepart' tool. This will free you from having to select change polygons from the union layer and then use XTOOLS or REGIONPOLY to separate your change polygons. The remainder of the process will stay the same.

Example 1



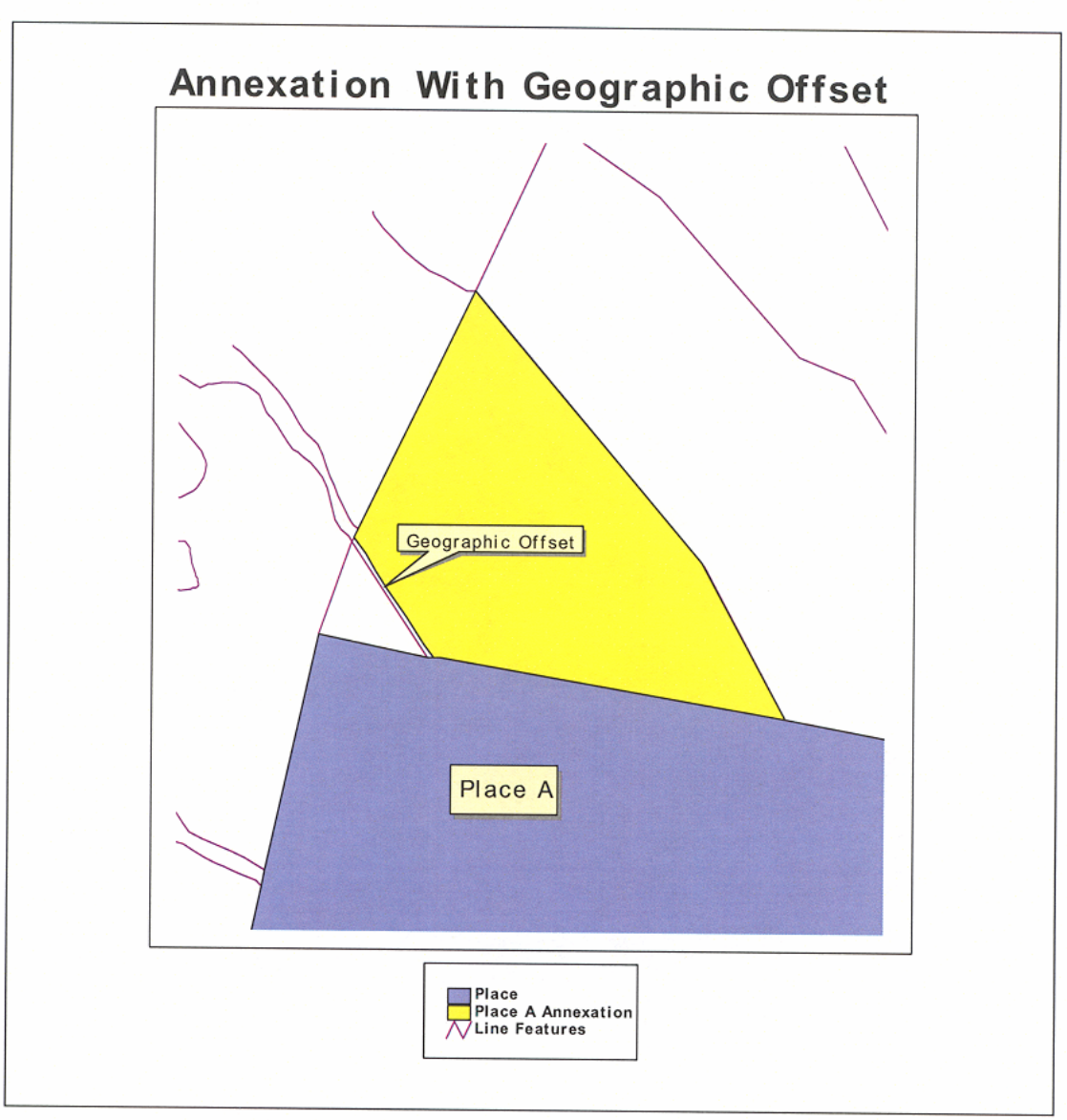
This example depicts two entities (e.g., MCD and place) from the Census Bureau provided shapefiles that County A wishes to update. Note, make copies of all Census Bureau shapefiles that you wish to update and make changes only to those copied versions.

Example 2



The participant made two updates to the copied version of Place A's Census Bureau provided place boundary, using the linear feature network provided by the Census Bureau (e.g., DB06<ST><COU>AllLines.shp) as a guide for boundary placement. These updates were made using various GIS editing methods (e.g., vertex edit in ArcView).

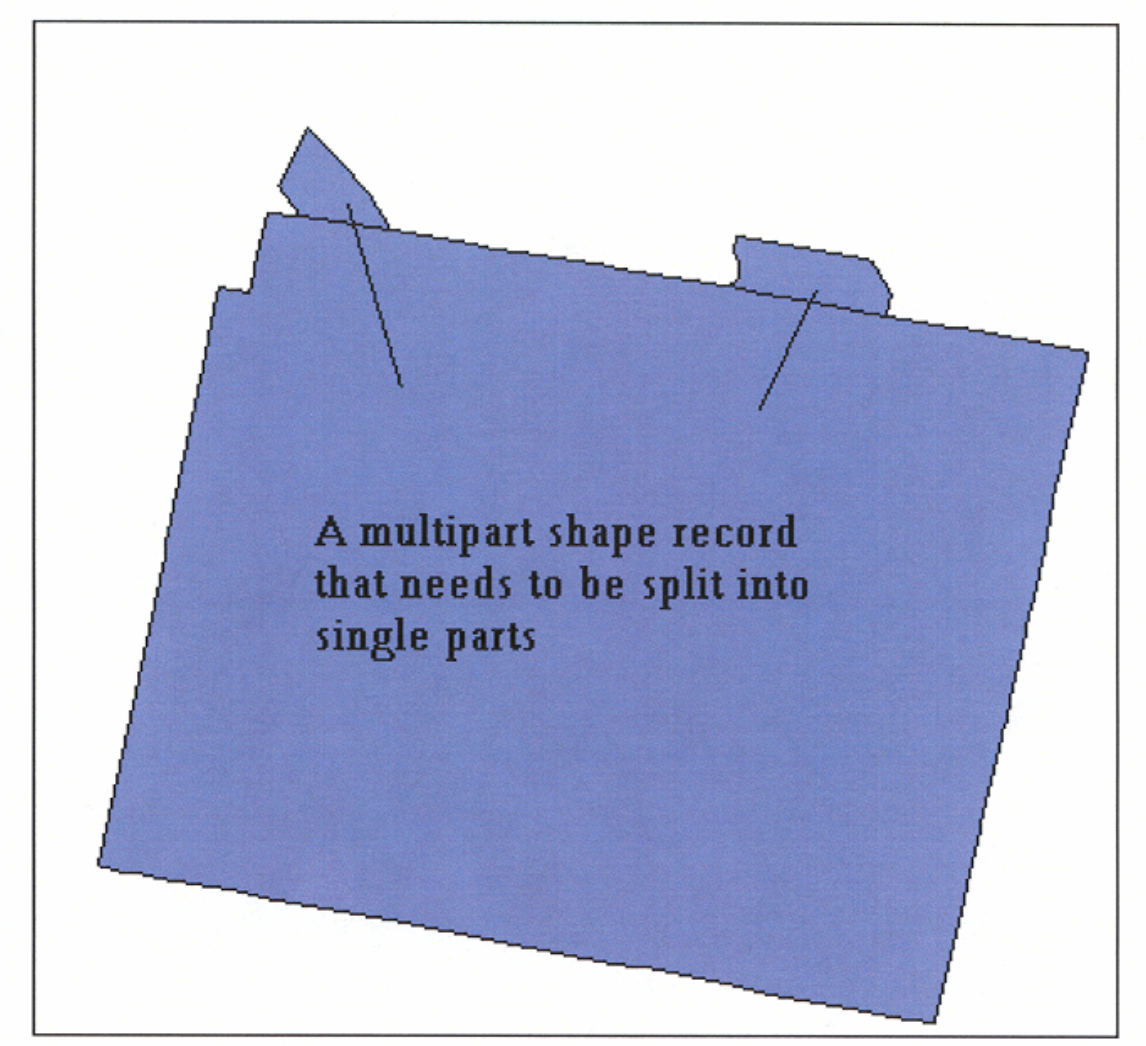
Example 3



In the above example, one of Place A's two annexations involves a geographic offset 35 feet from a road feature. In the change polygon attribute table, the participant must populate the CHNG_TYPE field with a 'AO' code. This code alerts the Census Bureau that an annexation is offset from a feature. In addition, the participant will also populate the OFFSET field in the polygon's attribute table with the distance value that the boundary is offset from the road (See Example 7 below).

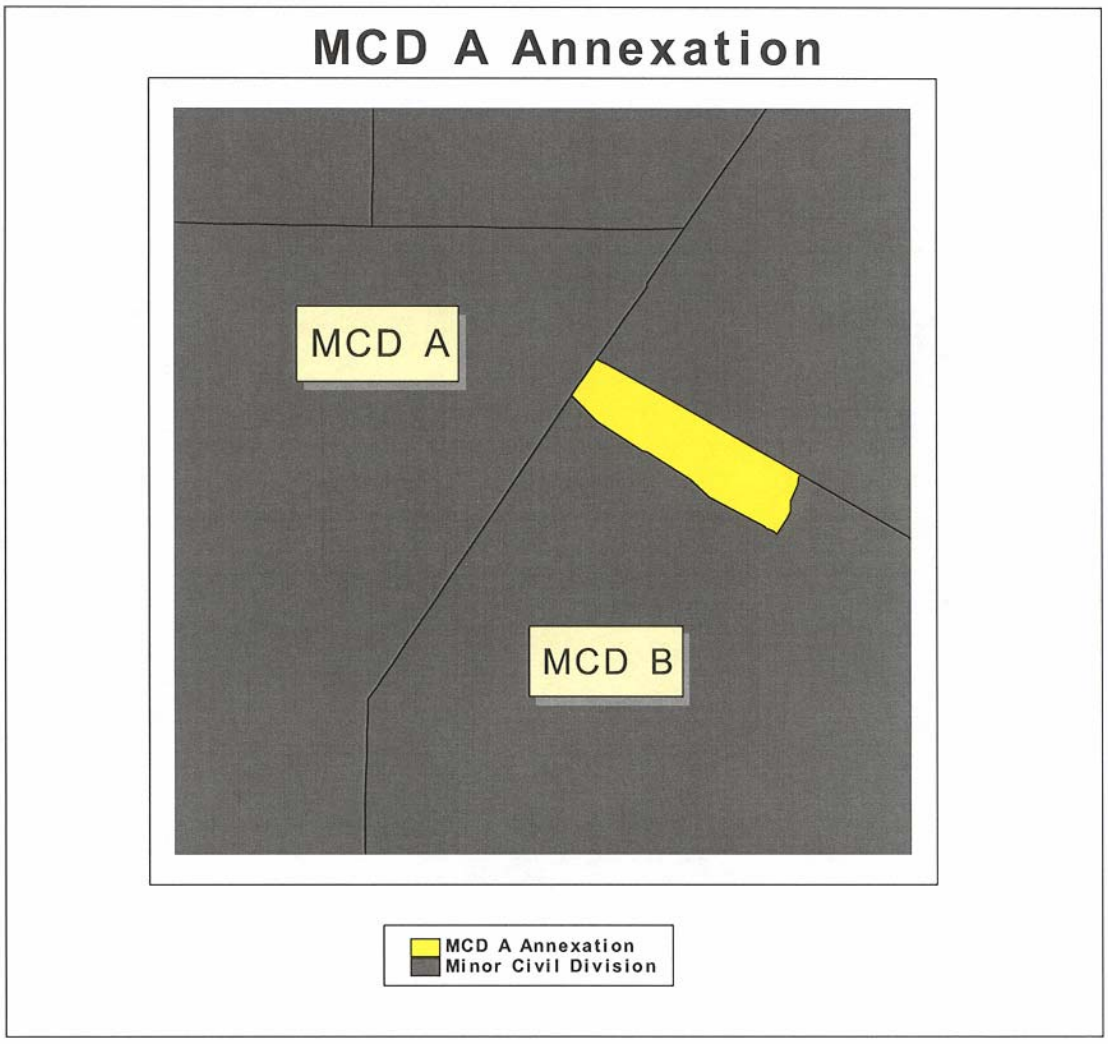
Example 4

Place A Union



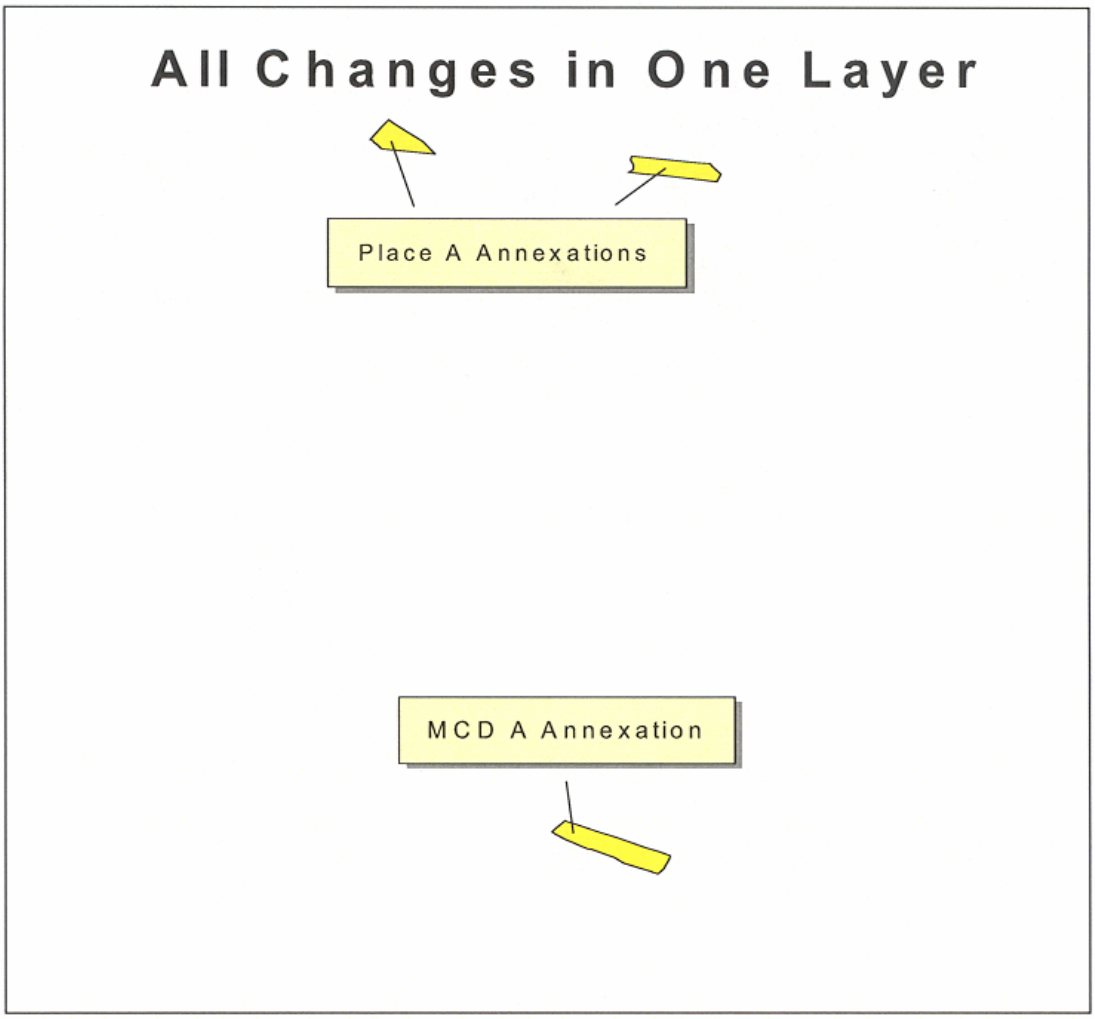
Upon completion of your boundary updates for a particular entity, union the modified copy and the original to create a layer that contains only separate change polygons. However, if multiple changes occurred to one entity (see above), the result of the union is a multipart shape record. In order for the participant to input all the necessary annexation related information into the attribute table, each polygon must be a separate record. There are several methods for creating single parts from multipart shapes (e.g., XTOOL extension for ArcView or ArcGIS, REGIONPOLY in ArcInfo, etc), so please ensure that each polygon has its own record in the attribute table. If each polygon does not have its own record, the Census Bureau may be unable to process your changes.

Example 5



In the above example, MCD A is annexing a piece of MCD B. Therefore, MCD B is losing territory to MCD A. Using similar editing techniques used in Example 4 for places, you should have one polygon record for each update. Create a change polygon layer for the MCD boundary change.

Example 6



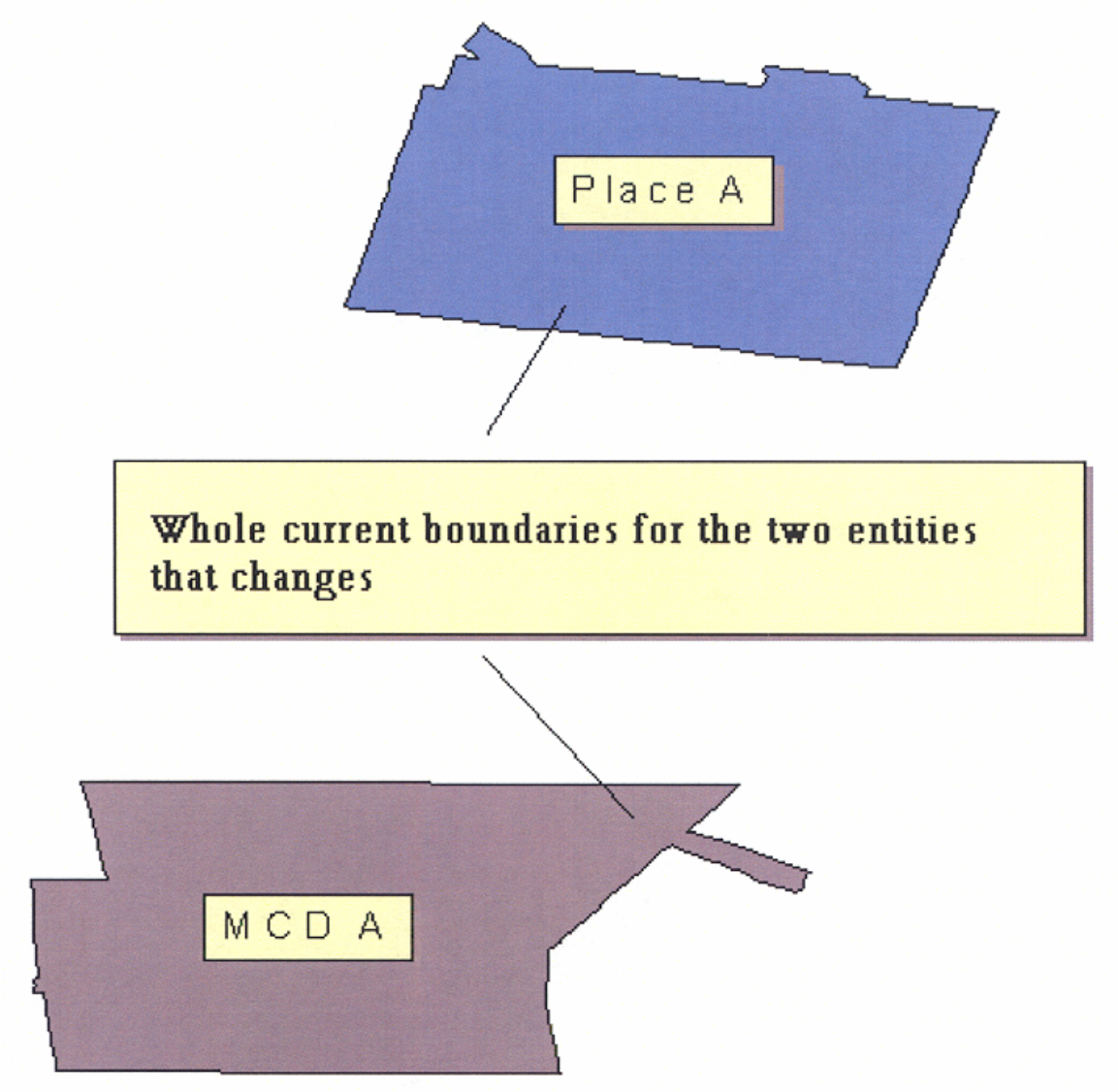
At this point you will have two change polygon layers (place and MCD). Please merge those two layers into one polygon layer. This can be done by using the "merge" GIS geoprocessing tool. Example 6 depicts the change layer the Census Bureau requires for Digital BAS submissions.

Example 7

State	County	Mcd	Place	Plc_name	Mcd_name	Chng_type	Eff_Date	Legal_Doc	Area	Offset
99	999		99999	Place A		A0	11/10/05	999999999		35
99	999		99999	Place A		A	11/05/05	999999999		
99	999	99999			MCD A	A	11/05/05	999999999		

This table extract is from Example 6. Note: the first record in the table is the geographic offset depicted in Example 3. Remember to use actual state/county/entity FIPS codes for the state, county, MCD, and place fields above. Also remember to use actual local codes in the LEGAL_DOC field.

Example 8



In the example above, the participant will submit two more layers (current place and MCD boundaries) in addition to the layer containing the change polygons. Therefore, the participant for this county will submit a total of three layers to the Census Bureau unless feature updates are being included along with boundary submissions. If feature updates accompany the boundary layers, then the total number will be four (See Example 9).

6.4 Feature Information (Optional)

The Census Bureau will collect feature changes designated by the participant. Please note that all feature-related update processing occurs at a different location and time within the Census Bureau. This may delay the inclusion of your feature updates on next year's BAS maps. If you have reviewed your features using our line feature network and have determined that the Census Bureau needs to add, remove, or rename features in a given area, you may submit your modifications in a separate layer. If your entity requires a large number of feature changes (>50), please contact the Census Bureau Regional Office for your area to discuss sending them your updates. To locate the Regional Office for your area, please click the link below:

http://www.census.gov/field/www/

Note: In the future, large numbers of feature changes will be made through a program called the Automated Feature and Attribute Update System (AFAUS). AFAUS will have the ability to add new road features, names, and address ranges to the MAF/TIGER database directly from local GIS files (we cannot process scanned maps or cadastral boundary files). The files must represent road centerlines (and eventually other feature types). The update process will be able to match local features to the MAF/TIGER database and update it with new and revised information. The Census Bureau will evaluate local files provided. The AFAUS is scheduled to begin production in 2007. There is no guarantee that street and name updates from local files will appear in the next BAS update cycle products at this time.

Please use the appropriate update code located in the coding scheme (Appendix B-1) to identify the type of feature modification being submitted. If any issues arise with the feature layer, which you submitted, a member of the BAS team will attempt to contact the respondent to clarify the issue. If clarification is not made prior to our project deadline, the updates may not be incorporated into TIGER®. These updates will then be held in suspense until clarification has been made.

6.4.1 Updating the Feature Shapefile (See Examples 9 and 10)

Create a new line layer which includes the following feature updates:

- Each change must contain a separate line record for each update made to the file, and
- Each update related line must contain one of the codes listed in the coding scheme (Appendix B-1) and that code must be recorded in the attribute field for the line.

6.4.2 Displaying Features Based on CFCC1

Within the *.shp file you may want to display different feature types based on the Census Feature Class Code (CFCC1). For example, you may want to display all roads in black,hydro features in blue, etc. Some of the CFCC1

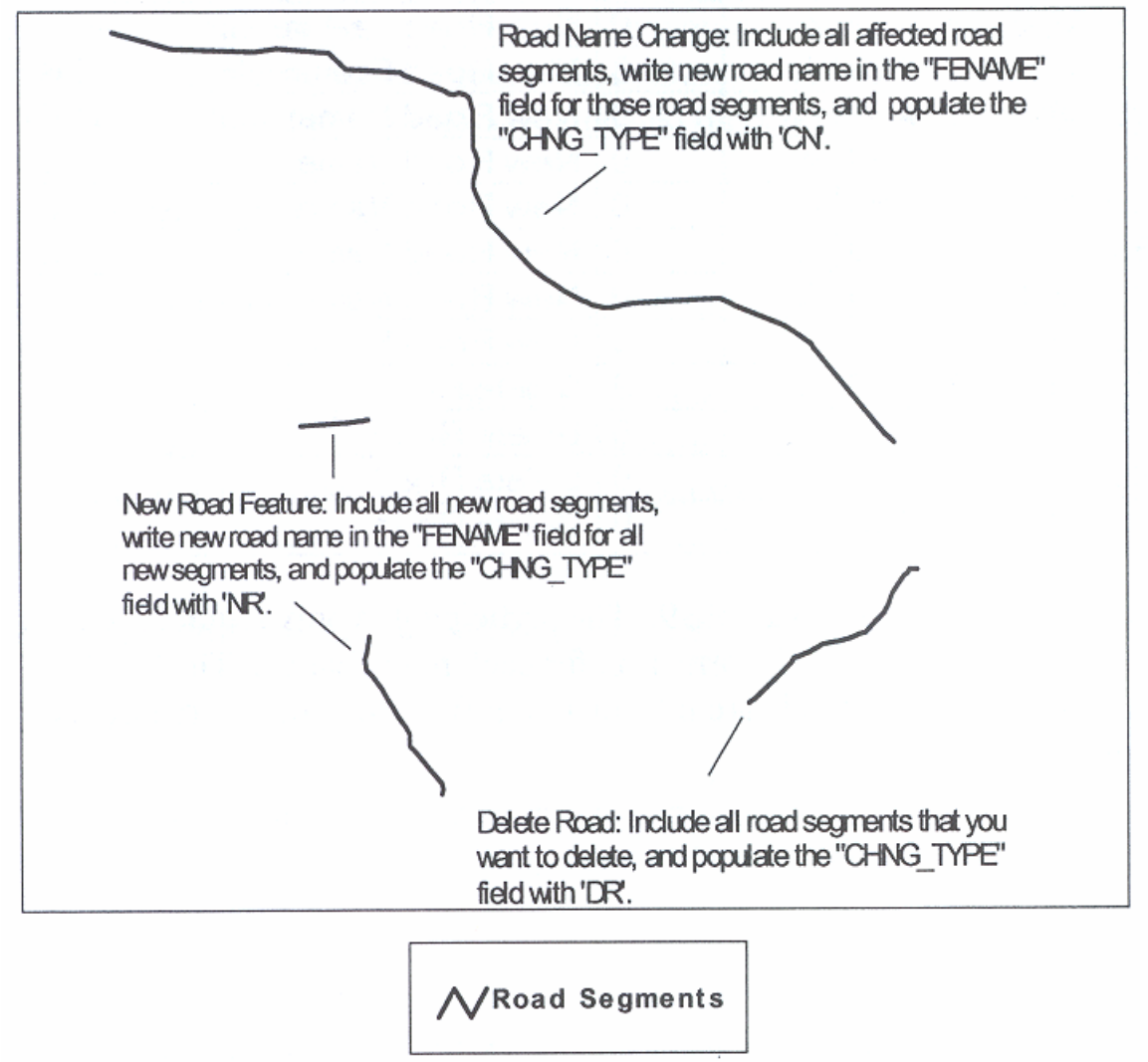
values listed below may not appear in the shapefiles you have, but for your reference:

- 'A' → Roads
- 'B' → Railroad
- 'C' → Miscellaneous Ground Transportation
- 'D' → Landmark
- 'E' → Physical Feature
- 'F' → Nonvisible Features (such as boundaries for incorporated
- places, counties, school districts, etc.)
- 'G' → US Census Bureau Usage (for internal programs)
- 'H' → Hydrography
- 'P' → Provisional Features
- 'X' → Not Yet Classified

For more detailed information on CFCC's, you can refer to pp. 3-28 to 3-45 of the most recent TIGER/Line® documentation at:

http://www.census.gov/geo/www/tiger/index.html

Example 9



This example consists of road corrections that you may wish to submit in addition to your boundary update layers. Please create a separate layer containing just those road segments that you would the like the Census Bureau to add, remove, or rename. Include this layer along with all the other required boundary layers in your return submission to the Census Bureau.

Example 10

Tlid	Cfcc	Cfcc1	Fidelity	Fename	CHNG_TYPE
9999999998	A99	A	0	New Road Feature	NR
9999999998	A99	A	0	New Road Feature	NR
9999999998	A99	A	0	New Road Feature	NR
9999999998	A99	A	0	New Road Name	CN
9999999998	A99	A	0	New Road Name	CN
9999999998	A99	A	0	New Road Name	CN
9999999998	A99	A	0	New Road Name	CN
9999999998	A99	A	0	New Road Name	CN
9999999998	A99	A	0	New Road Name	CN
9999999998	A99	A	0	Delete Road	DR
9999999998	A99	A	0	Delete Road	DR
9999999998	A99	A	0	Delete Road	DR
9999999998	A99	A	0	Delete Road	DR

This is a table extract from Example 9. The participant is only required to provide CHNG_TYPE and FENAME information for each road change. The "TLID," "CFCC," "CFCC1," and "Fidelity" fields are informational fields that do not require filling by the participant.

6.5 Address Information

The Census Bureau will not collect address break information through Digital BAS in 2006. A process is being designed to capture this information digitally in future surveys. If you have an accurate address source that you would like to share with the Census Bureau at this time, please contact your Census Bureau Regional Office. Contact information can be found on the back cover.

6.6 Metadata and Data Dictionary

- Submit a data dictionary, either as part of the metadata or as a separate file. (See Appendix B-2)
    - A data dictionary describes the fields included in any data tables associated with your submission. A data dictionary should list all the fields, describe the data in each field, and provide the legal values and their definitions for each field.
- Submit appropriate metadata with your file (See Appendix B-3).

6.7 File Submission

The Census Bureau requires the participant to submit at least two spatial layers with the potential of more (e.g., a layer containing road updates). These layers are described below:

- *Change Polygon Layer (required)*
  - This layer consists of all the changes that you would like the Census Bureau to make to your entity.

- *Whole Modified Entity Layer (required)*
  - This layer should only contain the complete and current boundary for the entity being updated.

- *Feature Update Layer (required only if there are road additions, deletions, or name changes)*
  - If you have road updates that you would like the Census Bureau to make, include this layer with just the road segments that you would like us to adjust.

Use the following as a guide to be sure you have included all the required layers.

6.7.1 Change Polygon Layer

Name the return change polygon layer as the following where <ST><COU> refers to the state/county FIPS code for your area:

DB06_<ST><COU>_Changes.*

- The change polygon layer must include:
  - a separate record for each polygon in the layer,
  - a code from the coding scheme (Appendix B-1), in the "CHNG_TYPE" field for
  - each record. No exceptions,
  - closed polygons,
  - legal document or ordinance numbers (except Georgia). This information goes in the "LEGAL_DOC" field,
  - effective dates,
  - acreage of each change polygon (for the State of Georgia only) in the "AREA" field, and
  - distance (in feet) in the "OFFSET" field if identified as on offset in the "CHNG_TYPE" field.

6.7.2 The Whole Modified Entity Layer

Name the whole modified entity layer as the following:

DB06_<ST><COU>_WholeEntity_<{PLC, MCD or COU}>.*

- The whole modified entity layer includes:
  - the whole entity as it currently exists after updating (this is essentially an "outline" of your updated entity), and

- the entity name and code (e.g., five-digit FIPS from the "PLACE" field and Name from the "PLC_NAME" field for places).
- Please submit each level of geography in a separate whole entity layer and name as follows:
  - Place → PLC
  - Minor Civil Division → MCD
  - County → COU

6.7.3 The Feature Update Layer (Optional)

Name the feature update layer as the following (this file is only required if making updates to your road features):

DB06_<ST><COU>_RDUpdates.shp

- The feature update layer must include:
  - a value in its "CHNG_TYPE" field that indicates the type of change, and
  - only feature updates (please do not include unmodified features).

6.7.4 Compressing the File

Compress all updated materials, Shapefile, Data Dictionary, and Metadata, into one ZIP formatted file called**: DB06_<ST><COU>_Return.ZIP**. *(Please use PkZip or GZip software if possible).*

6.7.5 Submit File via File Transfer Protocol (FTP)

Please FTP all files to the following address:

ftp://ftp2.census.gov/pub/incoming/geo/Digital_BAS/

To submit your file you must obtain a user name and password. Contact a member of the BAS team at 301-763-1099, or geo.bas@census.gov to obtain your user name and password. If you contact the BAS team via e-mail include a phone number where we can reach you. This is necessary because we will not provide your FTP password in e-mail.

6.7.6 Additional Information

The Census Bureau recommends using FIPS codes to identify entities such as counties, county subdivisions, and places. Using a standard code scheme facilitates the digital exchange of data. The USGS maintains FIPS codes for incorporated places and MCDs. The codes can be obtained at:

http://geonames.usgs.gov/fips55.html

If you have any questions or problems, please contact us by e-mail at

geo.bas@census.gov or telephone at 301-763-1099.

7. Submitting BAS form via Electronic BAS

Please complete and submit your BAS form through Electronic BAS using the instructions provided below.

- Using Internet Explorer navigate to the BAS web site
  - www.census.gov/geo/www/bas/bashome.html

- Select the appropriate BAS survey
  - BAS 1: Incorporated Place Survey
  - BAS 2: County or Statistically Equivalent Entity Survey
  - BAS 3: Minor Civil Division (MCD) Survey

- Enter your 'User Name' and Password located under Special Instructions (pp. 2 for Places and MCDs and pp. 5 for Counties) on your paper BAS form.
  (Note: The User Name and Password are not the same as those obtained for the FTP process.)

- Enter the required information into Electronic BA

Appendix B-1 - Coding Scheme

(CHNG_TYPE Field Information for both Change Polygon and Line Layers)

Polygon Codes

Polygon Change Layer:

This participant-provided layer should contain a separate update polygon record for each update made to our files. Each update related polygon must contain one of the following codes.

Code	Translation	Additional Requirements (if applicable)
A	Annexation	All polygons coded with an 'A' value require an annexation effective date. Note: Only supply ordinance and/or area values if your state requires such information.
AO	Geographic Offset	Same requirements as 'A.' However, supply an offset value (e.g., feet from road feature) if your annexation is offset from a road feature. An offset requires a value in the CHNG_TYPE field if the change polygon contains an 'AO.' Note: If a polygon gives the appearance of being offset and does not contain an 'AO,' then the change polygon boundary will be snapped to the nearest road centerline. For a definition of geographic offsets and corridors, refer to the BAS User's Guide.
AC	Geographic Corridor	Same requirements as 'AO.' However, provide change polygon with an 'AC' value if annexation creates a geographic corridor.
B	Boundary Correction	Boundary corrections do not require filling the annexation, offset, or area fields unless the correction involves offsets or geographic corridors. If a boundary correction creates an offset or a corridor, assign one of the codes documented below.
BO	Boundary Geographic Offset	Same requirements as 'B' above, however, provide an offset distance (e.g., feet from road feature).
BC	Boundary Geographic	Same requirements as 'B.' However, provide a Corridor geographic corridor distance (e.g. feet from road feature).

Line Codes

Road Corrections:

After reviewing road features in our line feature network and you have determined that the Census Bureau needs to add, delete, or rename road features in a given area, you may submit, in a separate layer, your road modifications using one of the following codes to identify the type of road modification needed:

Code	Translation	Additional Requirements (if applicable)
NR	New Road Feature	Within the change line layer, please code all new road segments with a 'NR' value in the CHNG_TYPE field.
CN	Change Road Name	If changing the name of a road feature, code the line segment(s) with a 'CN' in the CHNG_TYPE field and provide the road feature's new name in the "FENAME field.
CF	Change Feature Class	If you are changing the feature class code for a road, code the CHNG_TYPE field with a 'CF.' For instance, a local road was mistakenly coded as a highway.
DR	Delete Road	If deleting a road from you network, please provide all deleted road segments in a change line layer and code all deleted segments with a 'DR' value in the CHNG_TYPE field.

As mentioned in Section 6.4, the Census Bureau will collect any road modification designated by the participant. However, please note that all road-related updates are processed at a different location and time within the Census Bureau which may delay the inclusion of your road updates on next year's BAS maps.

Appendix B-2 - Data Dictionary

County Boundary Shapefile

Field	Length	Type	Description
STATE	2	String	Current State FIPS Code
COUNTY	3	String	Current County FIPS Code
COU_NAME	30	String	Current County Name
CHNG_TYPE	2	String	Type of Digital BAS Area Update
EFF_DATE	8	String	Annexation Effective Date
LEGAL_DOC	20	String	Annexation Ordinance Number
OFFSET	10	String	Geographic Corridor or Offset Dist.
AREA	10	Double	Acreage of Annexation

Consolidated City Shapefile

Field	Length	Type	Description
STATE	2	String	Current State FIPS Code
COUNTY	3	String	Current County FIPS Code
CONCITY	5	String	Current Consolidated City FIPS
CC_NAME	90	String	Current Consolidated City Name
CHNG_TYPE	2	String	Type of Digital BAS Area Update
EFF_DATE	8	String	Annexation Effective Date
LEGAL_DOC	20	String	Annexation Ordinance Number
OFFSET	10	String	Geographic Corridor or Offset Dist.
AREA	10	Double	Acreage of Annexation

Area Landmark Shapefile:

Field	Length	Type	Description
LNDK_CFCC	3	String	Area Landmark CFCC
LNDK_CFCC1	1	String	First Char. of Area Land. CFCC
LNDK_NAME	90	String	Primary Area Landmark Name

Minor Civil Division (MCD) Shapefile

Field	Length	Type	Description
STATE	2	String	Current State FIPS Code
COUNTY	3	String	Current County FIPS Code
MCD	5	String	Current MCD FIPS
MCD_NAME	90	String	Current MCD Name
CHNG_TYPE	2	String	Type of Digital BAS Area Update
EFF_DATE	8	String	Annexation Effective Date
LEGAL_DOC	20	String	Annexation Ordinance Number
OFFSET	10	String	Geographic Corridor or Offset Dist.
AREA	10	Double	Acreage of Annexation

Incorporated Place Shapefile

Field	Length	Type	Description
STATE	2	String	Current State FIPS Code
COUNTY	3	String	Current County FIPS Code
PLACE	5	String	Current Place FIPS
PLC_NAME	90	String	Current Place Name
CHNG_TYPE	2	String	Type of Digital BAS Area Update
EFF_DATE	8	String	Annexation Effective Date
LEGAL_DOC	20	String	Annexation Ordinance Number
OFFSET	10	String	Geographic Corridor or Offset Dist.
AREA	10	Double	Acreage of Annexation

All Line Shapefiles

Field	Length	Type	Description
TLID	10	Integer	TIGER/Line® ID
CFCC	3	String	Feature CFCC
CFCC1	1	String	First Character of feature CFCC
FIDELITY	1	Integer	Shape Fidelity Flag
FENAME	90	String	Feature Name
CHNG_TYPE	2	String	Type of Digital BAS linear update

Note: If the 'Fidelity' flag contains a value of '1,' then the Census Bureau was unable to maintain the boundary's shape fidelity during the MTAIP process. Please review all line segments (not just roads) in the Census Bureau's all-line layer for lines with this flag and make any necessary boundary corrections to the affected entity if the boundary has been coordinately shifted.

Appendix B-3 – Metadata Requirements

Metadata that describes the data content, coordinate system/projection, author, source, and other characteristics of GIS files is critical for Census Bureau staff to efficiently and accurately process files for Digital BAS. The Census Bureau requires that a metadata text file accompany every GIS file and layer submitted.

The Federal Geographic Data Committee's (FGDC) Content Standard for Digital Spatial Metadata provides a national standard that enables the data-sharing public to easily locate critical information about a file and ensure that no critical information is omitted inadvertently when creating metadata. For this reason, the Census Bureau requests that metadata submitted as part of Digital BAS is submitted using this standard. For information about the FGDC and its geospatial metadata standards, please visit the following site:

http://www.fgdc.gov/metadata/metadata.html

The Census Bureau requires that the following sections of the FGDC metadata form be completed as a minimum for considerations:

- citation (information about the originator, publication date, title edition, and other publications or information),
- description (section that contains an abstract describing your data set),
- time period of content (section that describes the vintage of the data),
- spatial domain (information about bounding coordinates),
- point of contact (general contact information),
- data quality information (information about attribute accuracy),
- spatial reference information (section on coordinate system / projection of the data set), and
- entity and attribute information (section that describes the contents of your table)

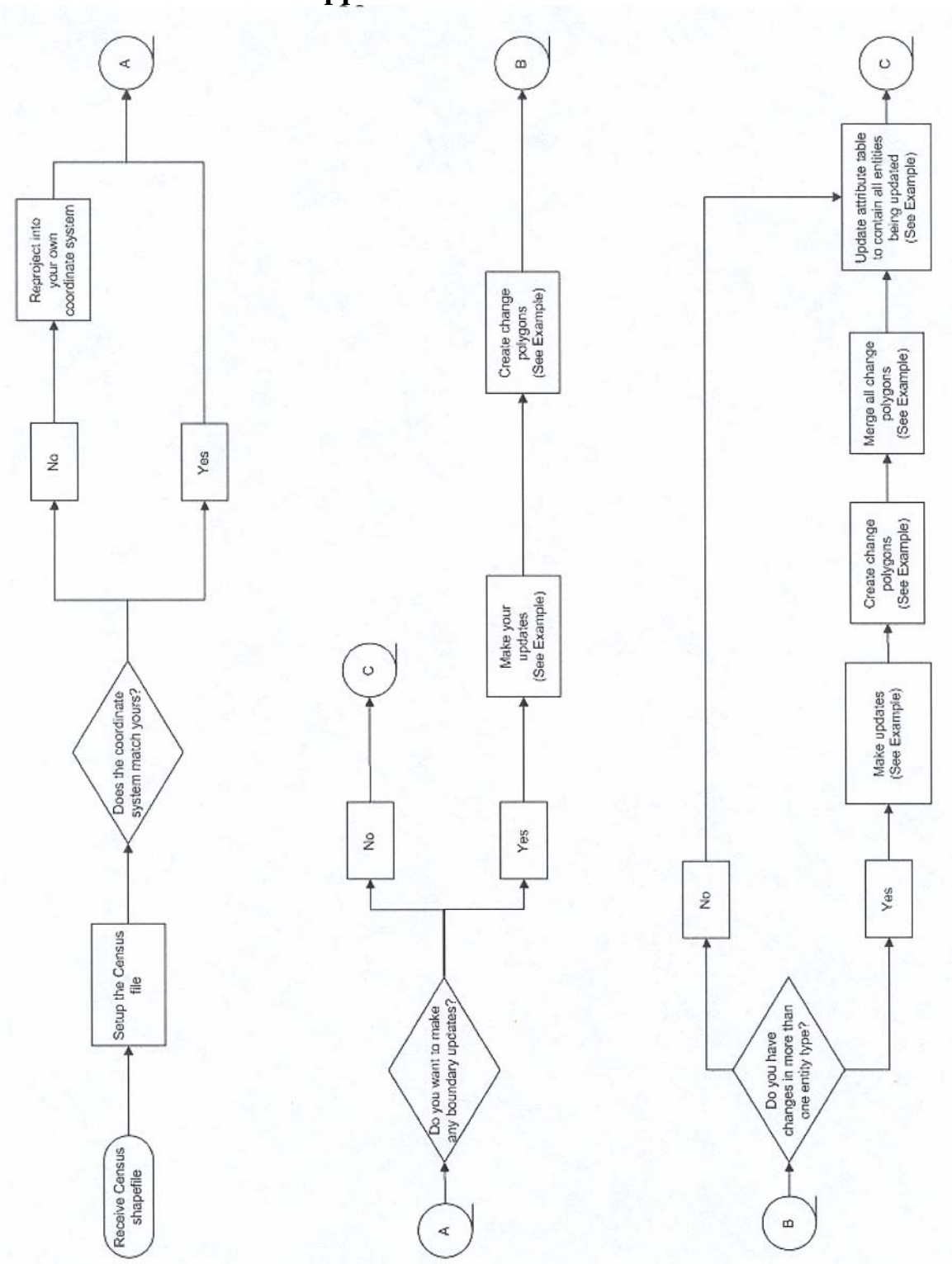
To help you fulfill the requirement of filling out and submitting metadata, the Census Bureau suggests visiting the USGS web site. This site contains useful information about FGDC compliant metadata, from which one can read about metadata frequently asked questions, view FGDC metadata examples, and connect to other FGDC related Web pages. The following is the USGS's metadata URL:

http://geology.usgs.gov/tools/metadata/

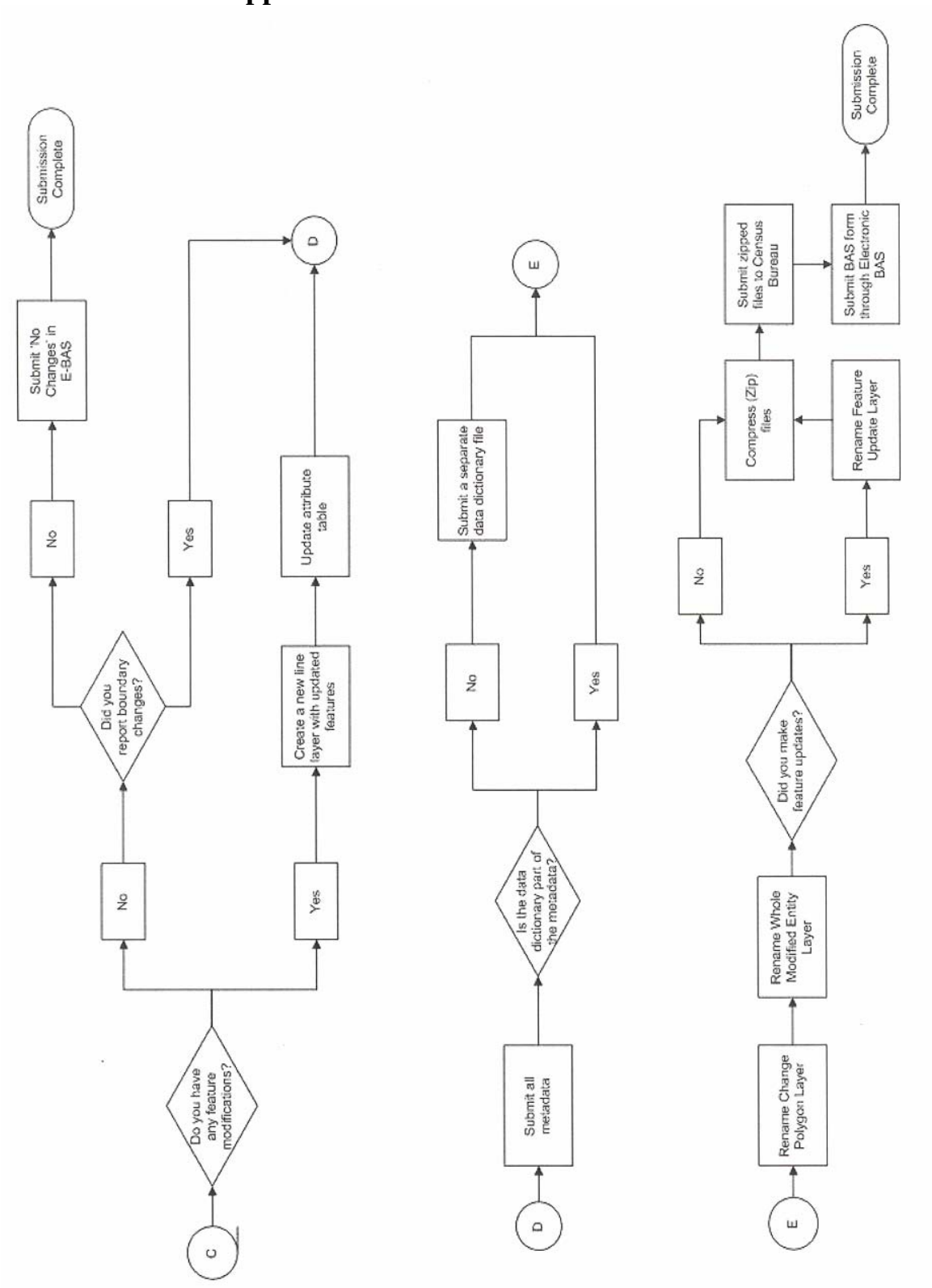
Moreover, if you are using Arc/Info, the FGDC link relating to metadata creation Tools (http://www.FGDC.gov/metadata/toollist/fgdcmeta.html) contains a useful Arc Macro Language (AML) (e.g., fgdcmeta.aml) that when executed, completes most of the aforementioned required sections of the metadata form automatically. This AML is a product of the Illinois State Geological Survey.

Note: ESRI's ArcCatalog also has an imbedded program that uses the FGDC standard in its creation of geospatial metadata.

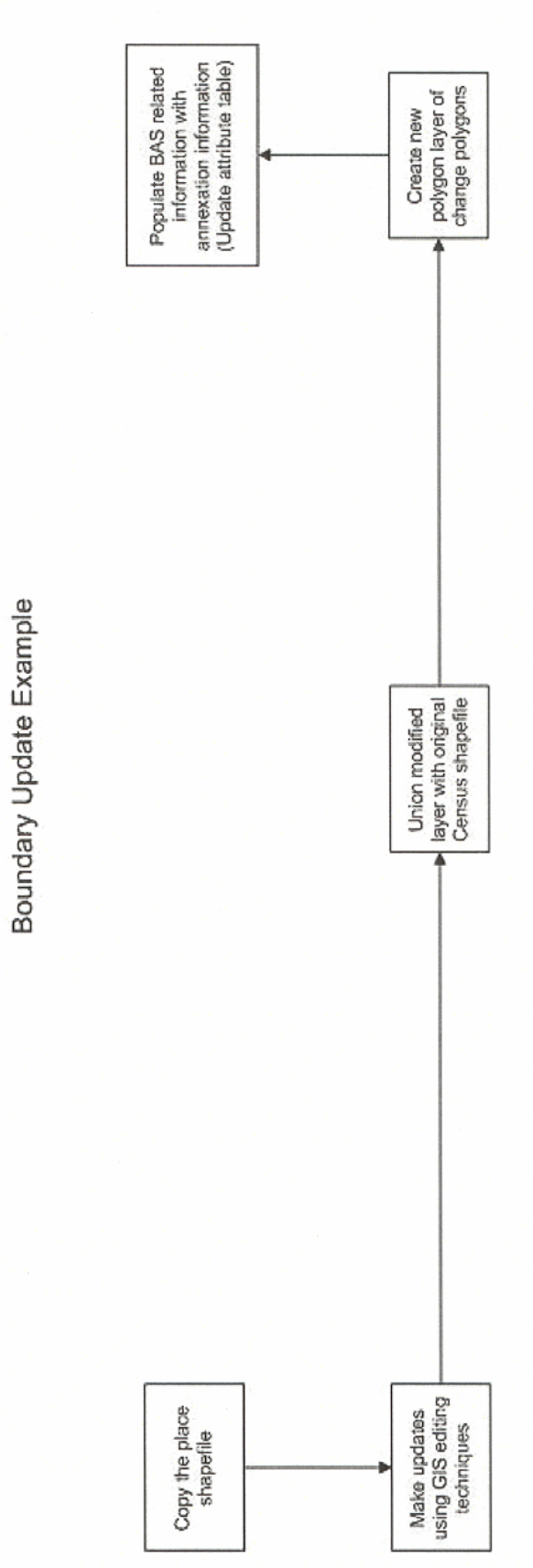
Appendix B-4 – Flowchart



Appendix B-4 – Flowchart Continued



Appendix B-5


Boundary Update Example
Copy the place shapefile
Make updates using GIS editing techniques
Union modified layer with original Census shapefile
Create new polygon layer of change polygons
Populate BAS related information with annexation information (Update attribute table)

Appendix C
Annexations and Detachments Form

2008 Census Dress Rehearsal
Local Update of Census Addresses (LUCA) Program
Annexations and Detachments Form

Please print or type the information about your government in the boxes below.

Government Name _____

Entity Code* _____

PERSON COMPLETING THIS FORM

Signature _____

Your Name (Printed) _____

Title _____

Telephone _____

FAX _____ **E-Mail Address** _____

Record below the information requested for all annexations (A) or detachments (D) that you have added to the 2008 Dress Rehearsal LUCA program map(s). Be sure that you put the authorization number and effective date in or near the area on the map. The Census Bureau will supply this information to the state certifying agency for your state; please ensure that you properly file all legal changes with your state government in accordance with your state's laws.

Type of Change A **or** D	**Authorization** *Enter in column 2 -* O **– Ordinance** R **– Resolution** L **– Local Law** S **– State-level action** X **– Other type**		**Effective date** *Month/day/year*	**County or parish in which** A **(annexation)** D **(detachment) or** O **(other) occurred**	**Minor Civil Division (if any) in which** A **(annexation)** D **(detachment) or** O **(other) occurred**	**Estimated Area**	
						Square miles or (in hundredths)	**Acres (in tenths)**
(1)	**Type (2)**	**Number (3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**

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***** *Use the 5-digit FIPS code in the subject matter area of your map. (Minor civil division FIPS codes are in red, while incorporated place codes are in green.)*

Appendix D
Contact Update Information Form

Contact Information Update Form

Person completing this form: Name _____

Address: _____

Phone: _____

New or Corrected Chief Executive/Highest Elected Official Information

Title (mark one): ☐ Ms. ☐ Miss ☐ Mrs. ☐ Mr. ☐ Dr. ☐ The Honorable
☐ Tribal President ☐ Tribal Chairperson ☐ Tribal Chief ☐ Tribal Governor

Name: _____
(First Name, MI, Last Name)

Name Suffix (mark if appropriate): ☐ Jr. ☐ Sr. ☐ II ☐ III ☐ IV

Position: _____
(e.g., Commissioner, Mayor, Supervisor, please do not abbreviate)

Department/Office: _____
(e.g., Commissioner's Office, Mayor's Office, please do not abbreviate)

Address: _____

_____
(City, State, ZIP)

Phone: _____ **Ext**_____**Fax:**_____

E-mail: _____

New or Corrected Contact Information

Title (mark one): ☐ Ms. ☐ Miss ☐ Mrs. ☐ Mr. ☐ Dr. ☐ The Honorable
☐ Tribal President ☐ Tribal Chairperson ☐ Tribal Chief ☐ Tribal Governor

Name: _____
(First Name, MI, Last Name)

Name Suffix (mark if appropriate): ☐ Jr. ☐ Sr. ☐ II ☐ III ☐ IV

Position: _____
(e.g., Planning Director, Planner, Clerk, please do not abbreviate))

Department/Office: _____
(e.g. Planning and Zoning, please do not abbreviate)

Address: _____

_____
(City, State, ZIP)

Phone: _____ **Ext**_____ **Fax:**_____

E-mail: _____

Appendix E
Inventory Form

Please use this form to identify the LUCA materials that you have updated and are returning to the Census Bureau for the 2008 Census Dress Rehearsal LUCA Program.

Government Name _____

Entity ID Code (i.e., CO18057, MC18057020, PL181420) _____

State _____ County _____

[ ] Local Address List File File Name _____

_____ Number of address records

[ ] Census Bureau map sheets

_____ Number of map sheets

[ ] Annexations and Detachments Form

[ ] Shapefile

D-1656

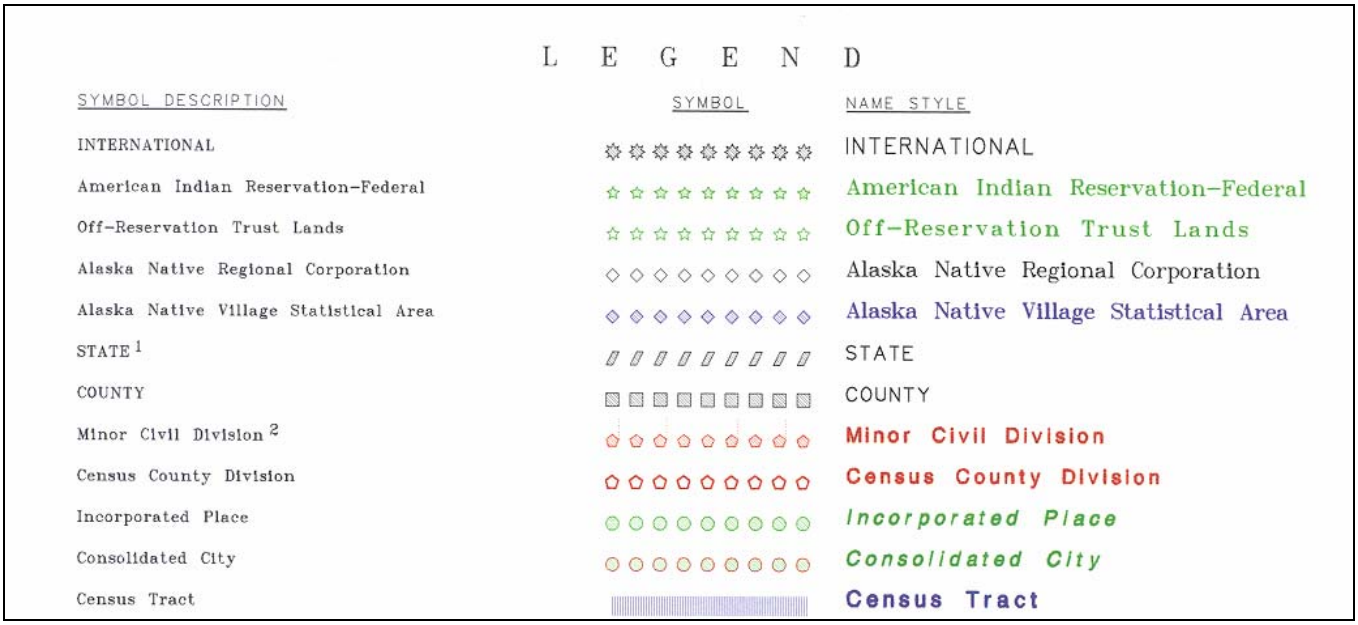
Appendix F
The Map Legend

The map legend describes the various symbols and colors used on the maps. The legend is divided into three columns:

1) The Symbol Description column includes the type of features, boundaries, and geography shown on the map.
2) The Symbol column shows the symbols representing the feature in the symbol description.
3) The Name Style column shows an example of the name of a particular feature such as a road, waterway, or geographic area displayed on the map.

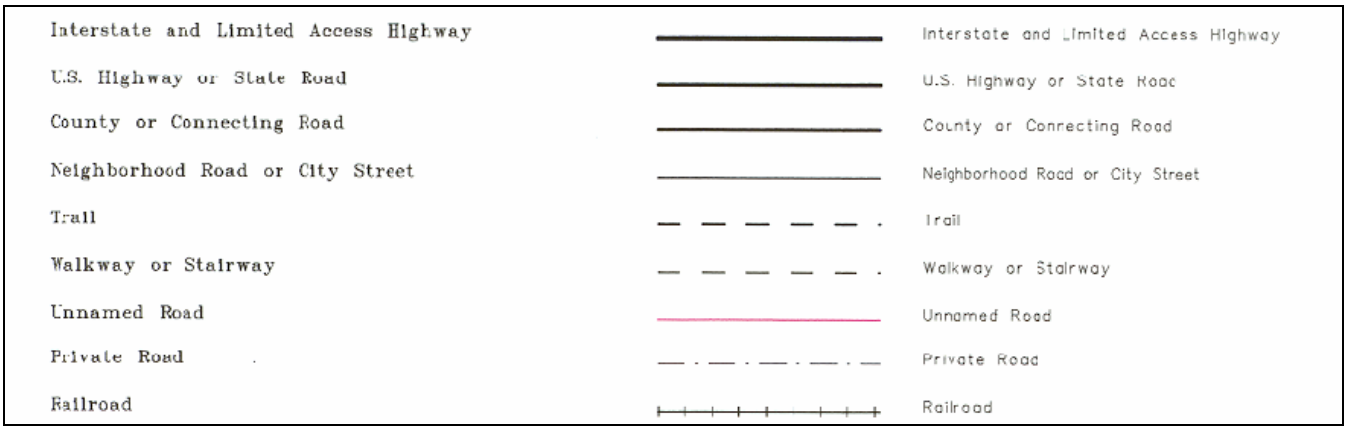
Boundaries

The first group of symbols in the legend refers to different boundary types or geographic area shown on the map. Each type of boundary has a distinct color.



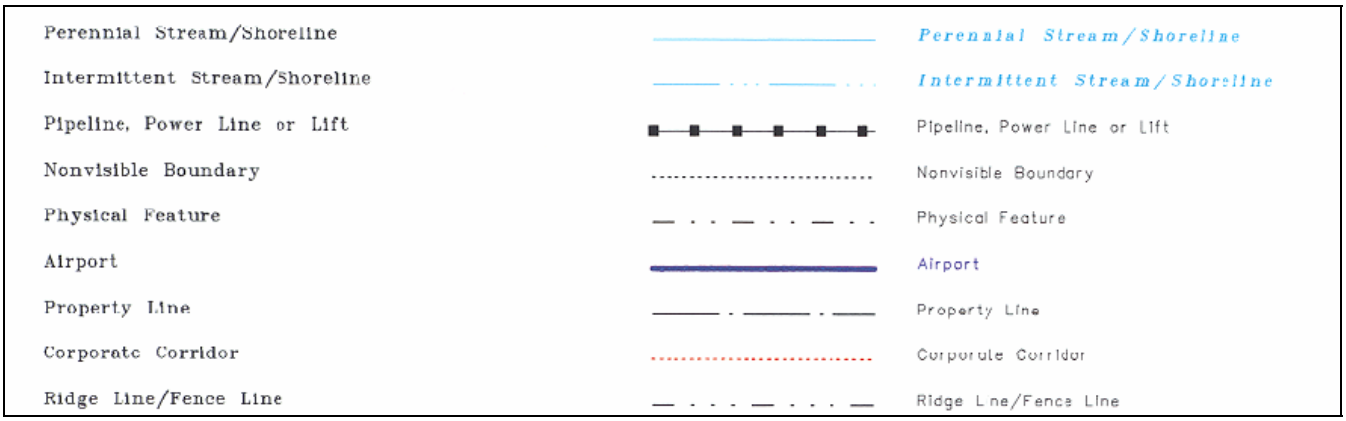
Transportation

The second group of symbols represents various types of transportation features. Thicker lines identify major roadways while thinner lines represent secondary roads and city streets. Private roads, walkways, ferries, and railroads represented by distinctive dashed lines are included in this section.



Other Features

The third group of symbols represents other feature types such as pipelines and streams, and non-visible boundaries. Streams and shorelines are blue, airport landing strips are purple, corporate corridors are a dashed red line, and offset corporate boundaries are a solid red line.

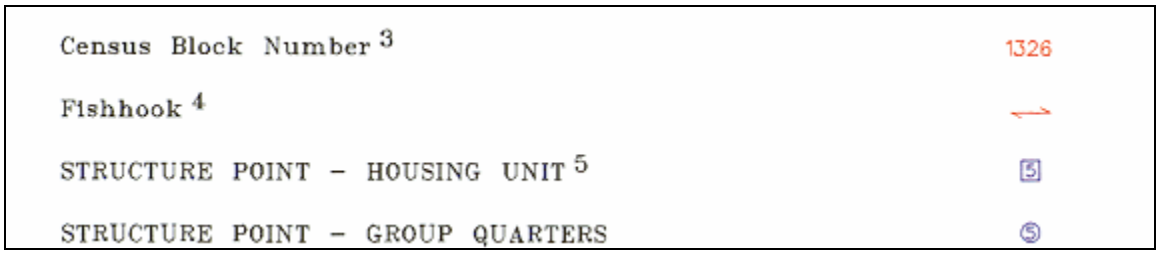


Census Blocks and Symbols

The fourth group of symbols are associated with census blocks. Census blocks are identified numerically and are color-coded. An asterisk next to a census block number indicates that the block number is repeated elsewhere on the map or is partially shown on an adjacent map.

A fishhook symbol across a map feature or boundary area indicates that the area on both sides of the feature or boundary belong to the same census block.

For those participants choosing Option 1, Full Address List Review and Option 2, Title 13 Local Address List Submission, this section also contains structure point symbols, which represent the exact location of residential structures. Structure points for multi-unit structures, such as apartment buildings, are identified by a structure point number, followed by the number of units within the structure in parentheses.

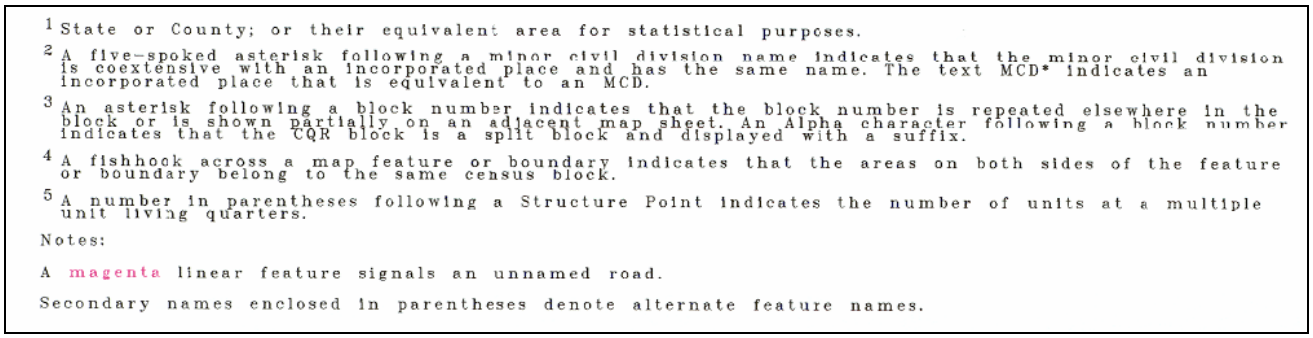


Landmarks

The last group of symbols represents various landmarks on the map such as rivers and lakes, campgrounds, jails, schools, airports, and parks. The Census Bureau maps for the 2008 Census Dress Rehearsal LUCA Program show the rivers and lakes in blue while campgrounds, jails, schools, airport, and parks are gray. The area outside of the subject area is speckled gray.

Footnotes and Notes

The footnote and notes section of the legend provide additional information and details on geographic relationships, boundaries, and symbols



[1] State or County; or their equivalent area for statistical purposes.

[2] A five-spoked asterisk following a minor civil division name indicates that the minor civil division is coextensive with an incorporated place and has the same name. The text MCD* indicates an incorporated place that is equivalent to an MCD.

[3] An asterisk following a block number indicates that the block number is repeated elsewhere in the block or is shown partially on an adjacent map sheet. An Alpha character following a block number indicates that the CQR block is a split block and displayed with a suffix.

[4] A fishhook across a map feature or boundary indicates that the areas on both sides of the feature or boundary belong to the same census block.

[5] A number in parentheses following a Structure Point indicates the number of units at a multiple unit living quarters.

Notes:

A magenta linear feature signals an unnamed road.

Secondary names enclosed in parentheses denote alternate feature names.

Glossary

Address breaks – The city-style address on each side of a boundary or at an intersection of a street with another feature.

Address Count List – Identifies the number of housing units and group quarters on the Census Bureau's address list for each census block within a jurisdiction.

Address range – The lowest and highest address numbers used to identify structures along each side of a street segment that has city-style addresses. Usually one side of the street has even address numbers and the other side has odd address numbers.

Annexations and Detachments Form – To be used by the participant to document legal boundary changes for the jurisdiction.

Block – See census block.

Block number – A 4-digit number, plus 1 alpha character block suffix, if applicable, used by the Census Bureau to identify each census block. For this program, census blocks are numbered uniquely within each census tract.

Boundary – A line, either invisible or coincident with a visible feature that identifies the extent of a geographic entity, such as a census tract, city, or county.

Boundary and Annexation Survey – An annual survey of all counties, and selected incorporated places and minor civil divisions conducted by the Census Bureau to determine the correct legal limits and related information as of January 1 of the survey year.

Census Bureau address list – A nationwide list of all housing unit and group quarter addresses known to the Census Bureau. In addition to the mailing address and ZIP Code, the Address List may identify the location of each housing unit and group quarters.

Census block – A geographic area bounded by visible features, such as streets, roads, streams, and railroad tracks, and invisible features, such as the boundaries of governmental units and other legal entities. A census block is the smallest area for which the Census Bureau collects and tabulates statistical information.

Census Bureau – An agency within the U.S. Department of Commerce. The Census Bureau is the country's preeminent statistical collection and dissemination agency. It publishes a wide variety of statistical data about people and the economy of the nation. The Census Bureau conducts approximately 200 annual surveys and conducts the decennial census of the United States population.

Census Bureau map – Any map produced by the Census Bureau. A Census Bureau map displays geographic entities used in a Census Bureau sponsored census or survey for which the Census Bureau tabulates data.

Census tract – A small, relatively permanent statistical division of a county or statistically equivalent entity, delineated for the purpose of presenting Census Bureau statistical data. Census tract boundaries were delineated for Census 2000 in accordance with Census Bureau guidelines

that specify the need for visible and stable boundaries. Census tracts never cross the boundary of a county or statistically equivalent entity, but may split other geographic entities; e.g., minor civil divisions and places.

Census tract number – A 4-digit, plus 2-digit suffix, if applicable, used to identify a census tract uniquely within a county or statistically equivalent entity. Leading zeros are not shown on Census Bureau maps

Chief executive/highest elected official – The person most responsible for the governmental activities of a local government. This person receives the LUCA Program invitation letter, and must designate a LUCA liaison, if desired.

City-style address – An address that consists of a house number and street name; for example, 201 Main Street. The address may or may not be used for the delivery of mail and may include apartment numbers/designations or similar identifiers.

Confidentiality – The guarantee made by law (Title 13, United States Code) to individuals who provide information about themselves or their business to the Census Bureau. This item refers to the Census Bureau's promise of nondisclosure of that information to others.

County – The primary legal division of most states. Most are governmental units with powers defined by state law.

Delivery Sequence File (DSF) – A computerized file containing all delivery point addresses serviced by the U.S. Postal Service (USPS). The USPS updates the DSF continuously as its letter carriers identify addresses for new delivery points or changes in the status of existing addresses.

Feature – Any part of the landscape, whether natural (such as, a stream or ridge) or artificial (such as, a road or power line). In a geographic context, features are any part of the landscape portrayed on a map, including nonvisible boundaries of legal entities, such as, city limits or county lines.

Geocode – A code that identifies a specific geographic entity. For example, geocodes needed to identify a census block for data collection are the state code, the county code, and the block number.

Geographic Information System (GIS) – A computer system for the storage, retrieval, and maintenance of information about the points, lines, and areas that represent the streets and roads, rivers, railroads, geographic entities, and other features on the surface of the Earth-information that previously was available only on paper maps.

Global Positioning System (GPS) – A satellite navigation system that provides coded satellite signals to a GPS receiver to compute location.

Governmental unit – A geographic entity established by legal action for the purpose of implementing specified governmental functions. Most governmental units provide a number of general government services and raise revenues (usually through taxing authority).

Group quarters – The Census Bureau classifies a group quarters as a place where people live or stay that is normally owned or managed by an entity or organization providing housing and/or

services for the residents. These services may include custodial or medical care, as well as other types of assistance, and residency is commonly restricted to those receiving those services. People living in group quarters are usually not related to each other.

Group quarters include such places as college residence halls, residential treatment centers, skilled nursing facilities, group homes, military barracks, correctional facilities, workers' dormitories, and facilities for people experiencing homelessness.

Housing unit (HU) – A single-family house, townhouse, mobile home, trailer, vacant trailer park pad, apartment, group of rooms, or single room occupied as a separate living quarters, or, if vacant, intended for occupancy as a separate living quarters. A separate living quarters is one in which one or more occupants (or, intended occupants, if vacant) live separate from any other individual(s) in the building and have direct access from outside the building or through a common hall.

Incorporated place – A type of governmental unit, incorporated under state law as a city, town, village, or borough, having legally prescribed boundaries, powers, and functions.

Legal boundary – The legally defined boundary of a governmental unit, usually referring to a county, minor civil division, or incorporated place. The legal boundary identifies the area within a local government's jurisdiction, and thus bounds the area of LUCA responsibility.

LUCA liaison – Also known as the program liaison or designated liaison. A person voluntarily appointed by the chief executive/highest elected official of each jurisdiction to review the Census Bureau's address list and maps against local records to identify differences.

Map Sheet to Block Number Relationship List – A list identifying census block numbers and the Census Bureau map(s) on which each block is located.

Master Address File (MAF) – A nationwide list of all addresses to support many of the Census Bureau's operations. Besides containing mailing addresses and ZIP Codes, a MAF record also contains geographic information about the location of addresses.

Minor civil division (MCD) – A type of governmental unit that is the primary governmental or administrative subdivision of a county. MCDs are identified by a variety of terms, such as town (in 8 states), township, and/or district, and include both functioning and nonfunctioning governmental entities.

Noncity-style address – An address that does not use a house number and street name. This includes rural route and box number address and highway contract route addresses, etc., which may include a box number, post office boxes and drawers, and general delivery.

Occupied housing unit – A housing unit is classified as occupied if it is the usual place of residence of the individual or group of persons living in it at the time of enumeration or if the occupants are only temporarily absent; for example, away on vacation. Occupied rooms or suites of rooms in hotels, motels, and similar places are classified as housing units only when occupied by permanent residents, that is, individuals for whom the facility is their usual place of residence.

Regional Office – One of 12 permanent Census Bureau offices responsible for the Census Bureau's office and field operations within its region.

Shapefile – Data set used to represent geographic features such as streets and boundaries. Shapefiles can represent point, line, or area features and require GIS or mapping software.

Street segment – The portion of a street or road between two features that intersect that street or road, such as, other streets or roads, railroad tracks, streams, and governmental unit boundaries. The Census Bureau records the known address ranges for every street segment with city-style addresses.

Structure Point – A dot on a Census Bureau map, used to show the location of one or more living quarters. Unique numbers are assigned within the census block to each structure point, which corresponds to the entry in the address register for a basic street address. Structure points are stored in the TIGER® database.

TIGER/Line® file – The computer-readable extract of the TIGER® database that the Census Bureau makes available to the public. It contains data representing the locations of all roads, railroads, bodies of water, boundaries of legal and statistical entities, and other visible and nonvisible features, along with their attributes (names, address ranges, geographic codes, census feature class codes, and the like).

Topologically Integrated Geographic Encoding and Referencing (TIGER®) – A computer database that contains a digital representation of all map features (streets, roads, rivers, railroads, lakes, and so forth) required to support Census Bureau operations, the related attributes for each, and the geographic identification codes for all entities used by the Census Bureau to tabulate data for the United States, Puerto Rico, and Island Areas.

Tract – See Census tract.

Vacant housing unit – A habitable structure containing living quarters that is not occupied. New housing units not yet occupied are classified as vacant housing units if construction has reached a point where exterior windows and doors are installed and final usable floors and a roof are in place. Vacant units are excluded if open to the elements, or if there is positive evidence, such as a sign on the house, that the housing unit is to be demolished or has been condemned.

1990 Address Control File – The 1990 residential address list used to label questionnaires, control the mail response check-in operation, and determine the nonresponse followup workload.

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Census Bureau Regional Offices

Charlotte Regional Office
901 Center Park Drive
Ste. 106
Charlotte, NC 28217-2935
(704) 424-6420
Fax: (704) 344-6169
E-mail: **charlotte.regional.office@census.gov**

Seattle Regional Office
601 Union Street, Suite 3800
Seattle, WA 98101-1074
(206) 381-6260
Fax (206) 381-6629
E-mail: **seattle.regional.office@census.gov**